

# Municipal Journal

Volume XXXIII.

NEW YORK, AUGUST 1, 1912.

No. 5.



FIFTH AVENUE GRADING, SHOWING FRICK, CARNEGIE AND ANCHOR BANK BUILDINGS.

Cut of 14.9 ft. at left corner. Temporary sidewalk and bridged street crossing shown.

## GRADING THE HUMP AT PITTSBURGH

Grade Lowered in Three Miles of Streets and Alleys—Maximum Cut Sixteen Feet—Requires Altering of Costly Buildings and Reconstruction of Sewers, Wire Conduits and Water Mains.

By WILLIAM E. PATTERSON.

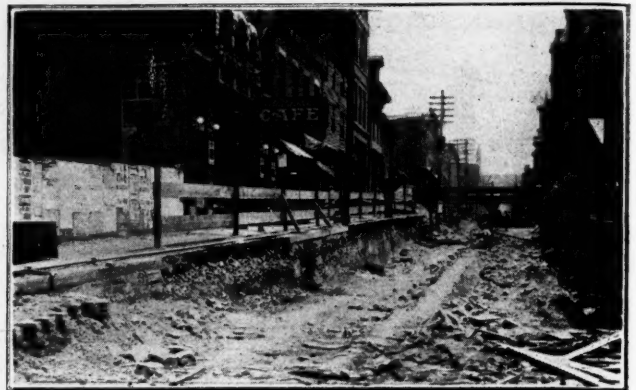
NEAR the heart of the business district of Pittsburgh, Pa., is a hill of considerable elevation known as the "hump," which has presented a barrier to the extension of the business district and to the affording of sufficient outlets for the concentrated traffic of that district. For a number of years the desirability of extensive grading to remove these objections has been realized, but only a small amount has been done here and there. Immediately after his inauguration the present Mayor, William A. Magee, made serious preparations for carrying out a considerable amount of improvement of all kinds throughout the city, including the grading of the hump. There was a set-back of a year when the Supreme Court set aside on a technicality the bond issue authorized by the people at the election in 1909; but the Mayor submitted practically the same bond issue proposition in the following year, but with no

provision in this for the hump improvement, as he believed that this could easily be taken care of by a councilmanic bond issue. Since February, 1911, Mayor Magee and Director of the Department of Public Works, Joseph G. Armstrong, have awarded contracts for more than \$5,000,000 worth of public improvements, and during the present summer will probably add considerably to this total. As contemplated, money for the hump improvement was provided for by the new city council, which voted for these bonds last fall, the work including the grading and widening of several thoroughfares of the hump district.

The contract for doing the work of the hump improvement was awarded to the firm of Booth & Flinn of Pittsburgh, for the sum of \$671,471, to which should be added \$30,743 for re-laying water mains, and \$10,000 for the reconstruction of the police and fire alarm telegraph sys-

tem, all of which are in underground conduits. The work includes 21,270 front feet of streets and 10,850 feet of alleys, affected by the changes of grades, making a total of 32,120 front feet. In addition to the reconstruction of sewers and manholes, relaying of water mains, wire conduits and other sub-surface structures, constructing temporary walks, foot bridges, etc., the work includes 143,000 cubic yards of excavation, 13,700 square yards of stone block pavement, 10,700 square yards of creosoted wood block pavement, 4,600 square yards of brick pavement, 100 square yards of stone block relaid on new gravel foundation; 2,200 linear feet of concrete curb with steel protected edge, 100 feet of sandstone curb recut and reset; 4,800 square feet of new granite street crossings, 400 square feet of such crossings recut and reset, and 100,000 square feet of concrete sidewalks.

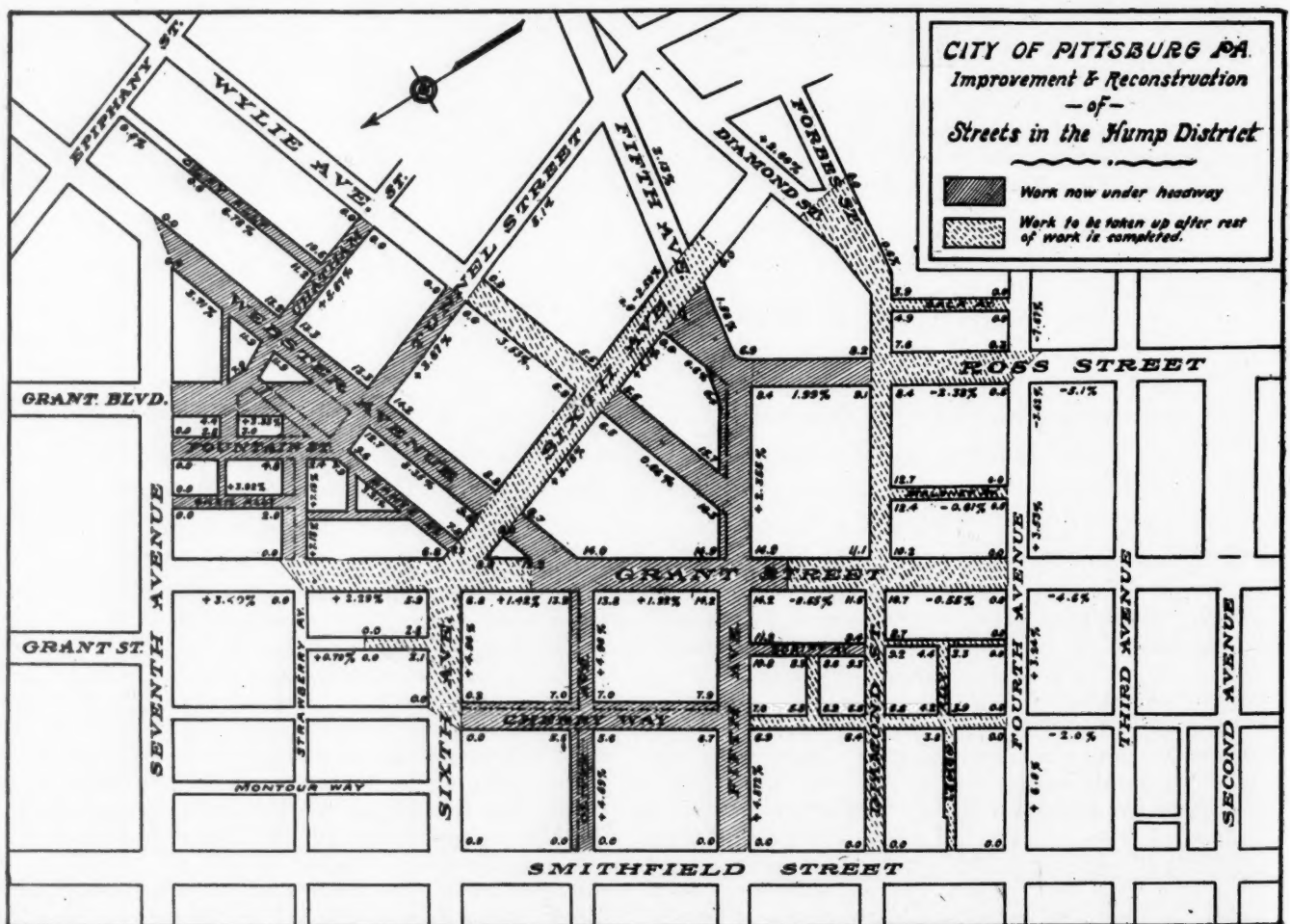
At the same time that this work is being carried on, a considerable percentage of the buildings on the streets which are being lowered are being torn down or reconstructed. Many of the buildings in this district were originally dwelling houses, built many years ago and later transformed into store and office buildings. A considerable proportion of these are being torn down and replaced with large and more modern structures. Most of the larger buildings of recent construction, however, are being lowered or having their basements transformed into first floors. The excavation necessary to bring the different properties to the required grade must to a great extent be carried on in the cellars of the buildings while they are being occupied, and the buildings are being supported by timbering until the new foundations are ready to receive them. About 50 per cent. of the area is solid rock, and the work of excavating the properties is even more difficult than the excavations made within the street lines.



WEBSTER AVENUE FROM SIXTH AVENUE.  
Showing foot-bridge across cuttings and sidewalk guards.

An additional difficulty is introduced by the fact that, as the streets are being materially changed in rate of grade as well as lowered, adjacent buildings have to be lowered through different distances in order to bring them to the new sidewalk level, and in many cases adjoining buildings have party walls, or where this is not the case the walls are built close together. A considerable part of this private work of changing and reconstructing is being done by the same contractors who have the contract for the grading for the city, and they also are doing the relocating of many of the public utility lines not owned by the city. This is considered to be very advantageous, as it prevents the almost constant clashing between gangs working at the same place for different contractors, and between the contractors themselves, which would otherwise almost inevitably be the case.

Briefly summarized, this work comprises the widening



PITTSBURGH'S "HUMP" DISTRICT, SHOWING WHERE WORK IS NOW UNDER WAY AND WHERE CONTEMPLATED.



of Fifth avenue from Grant street to Ross street, the widening of Cherry Way from Fifth avenue to Sixth avenue, the widening of Oliver avenue from Smithfield to Grant street, the widening of Strawberry alley from Grant street to Fountain street, and the extension of the Grant boulevard through private property and Tunnel street to Webster avenue, thus bringing the boulevard to the center of the city via Webster avenue and Oliver avenue; also grading down most of these, all of which will contribute a great improvement in transportation facilities for this section of the city and relieve the existing congestion.



WHERE THE DEEPEST CUT IS TO BE MADE.  
Street-car tracks and stone block pavement removed.

In regrading the streets, the deepest cut occurs at the intersection of Fifth and Wylie avenues, where the cut is 16.3 feet. About 40 years ago an 18-foot cut was made at this point, and consequently the new street will be about 34 feet lower than the original surface. A map and profile are shown, from which a general idea may be had of the amount of street grading. The streets to be lowered include sections of Fifth avenue, Grant street, Webster avenue, Wiley avenue, Tunnel street, Ross street, Cherry Way, Oliver avenue, Diamond street and Strawberry alley. In these streets are lines of water and sewer pipe, the gas mains of three gas companies, and wire conduits of two telephone companies, two telegraph companies, an

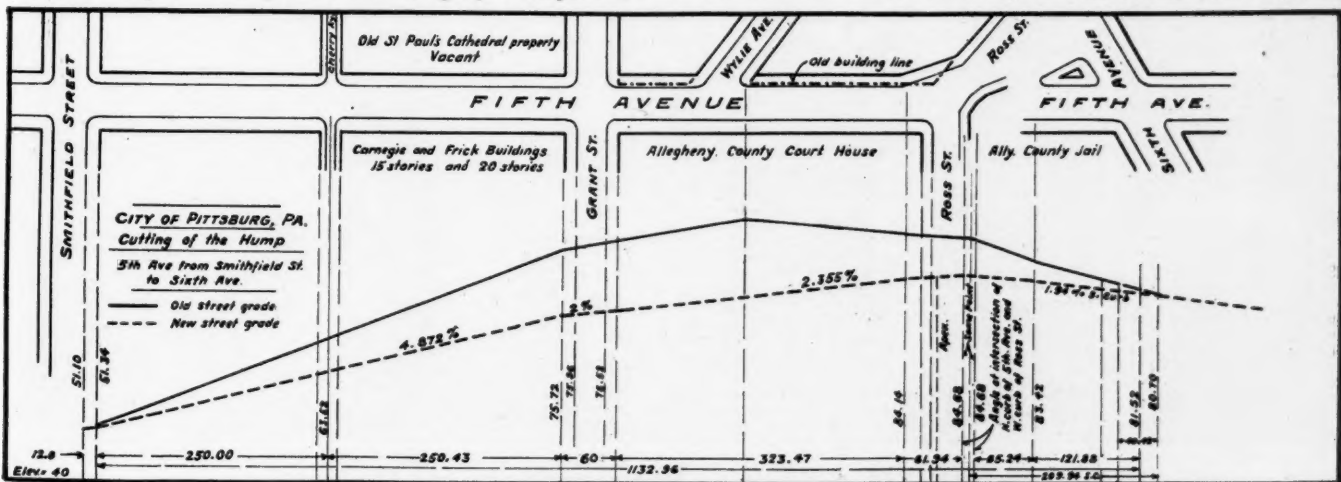


STEAM SHOVEL WORKING IN FIFTH AVENUE.

Four-story brick building on the right was built before grading of 40 years ago, and its present first floor was then the basement.

electric light company, and others. The Pittsburgh Railway Company, a branch of the Philadelphia Company, occupies most of these streets with double or single track street railway lines. The Philadelphia Company, the People's Gas Company and the Consolidated Gas Company all have mains in these streets, which must be lowered to conform to the new street grades. The mains of the Philadelphia company are from three to 20 inches in diameter and total 14,000 feet. The People's Gas Company has 12,080 feet of 8-inch mains, and the Consolidated Gas Company 24,000 feet of 2 to 18-inch mains. The Allegheny County Light Company has conduits in many of the streets and alleys varying from 3-duct to 24-duct, with cables in about one-half of the ducts. The Central District and Printing Telegraph Company has in a number of streets conduits of from 4 to 42 ducts, with cables in about 60 per cent. of the ducts, each containing from 600 to 800 wires. The Western Union Telegraph Company has its cables in 3-inch iron pipes on Fourth avenue and Grant street. The Postal Telegraph Company occupies part of the conduits of the Pittsburgh and Allegheny Telephone Company, which has conduits in a large number of the streets containing 2 to 70 ducts each and about one-half occupied with cables. The city's police and fire alarm telegraph system wires are laid in the conduits of the Central District and Printing Telegraph Company.

Various methods were discussed by the officials of the several telephone and telegraph companies for maintaining their service and reconstructing their lines. The unanimous decision was reached that the existing conduits would have to be destroyed and new ones constructed under the new street surface; and that while the work of



PROFILE OF FIFTH AVENUE, SHOWING OLD AND NEW GRADES.



GRANT STREET NEAR FIFTH AVENUE, BEFORE EXCAVATING, SHOWING FRICK BUILDING.

grading was under way the present cables would have to be kept in use. The plan is to carry these cables on poles planted to the depth of the new grade until such time as the new conduits and cables can be put in service.

Work on the grading contract was started on April 5th, 1912, at Fifth avenue and Grant street, Mayor Magee lifting the first paving stone and shovelful of earth with a silver pick and shovel in the presence of a large number of city officials and citizens. According to the terms of the contract the entire work is to be completed by January 1, 1914. For every day of delay after that time there is a penalty of \$100, and for every day that the job is finished ahead of the time limit a bonus of \$100 will be paid.

In order to interfere as little as possible with traffic, certain of the main thoroughfares in this district will be left undisturbed until work on the others is completed and traffic is resumed on them. In order to protect and care for business and foot traffic on the thoroughfares where the construction is under way, temporary boardwalks are

being built over and elevated slightly above the sidewalks, and footbridges are built at street crossings. By adopting these precautions and such others as are demanded by the varying conditions, the contractors are lowering both street and sidewalk grades and changing the buildings without seriously interfering with business. Where the street excavation will extend below the foundations of a building, temporary underpinning will be used to sustain the fronts of the buildings.

The excavation in the area to be graded will be about 50 per cent. in solid rock, this rock area being that part lying south of the line drawn from the corner of Fourth avenue and Smithfield street to the corner of Seventh avenue and Webster avenue.

The greatest amount of work so far has been done upon Fifth avenue, and it is hoped to have this open for traffic some time in August. At first practically all the dirt excavated was taken to the north side, where it was used in raising the grade of a number of the streets above the flood stage of the Allegheny River. At present the contractors are hauling the greater part of the dirt to the Try street yards of the Pan Handle Railroad, where they are filling an average of 18 to 20 cars a day from very extensive loading platforms, in which cars the dirt is removed by the railroad. Each car is estimated to carry about 28 cubic yards of earth, and the amount removed is therefore about 500 to 550 yards per day, exclusive of about 100 cubic yards per day which is still being hauled to the north side. As the haul to the Try street yards is only about two squares from the work, the teams are able to haul an average of 25 or more loads per day, and thus remove the material much more quickly than when hauling it all to the north side. These teams were timed Friday, July 12, and nine teams on the short haul to the railroad yards hauled 237 loads of earth from one steam shovel, an average of 26 1-3 loads per day for each wagon, working 10 hours per day. Shortly after starting work the contractors put a large Marion steam shovel at work on Fifth avenue. This can load a wagon in 1 3-4 minutes,



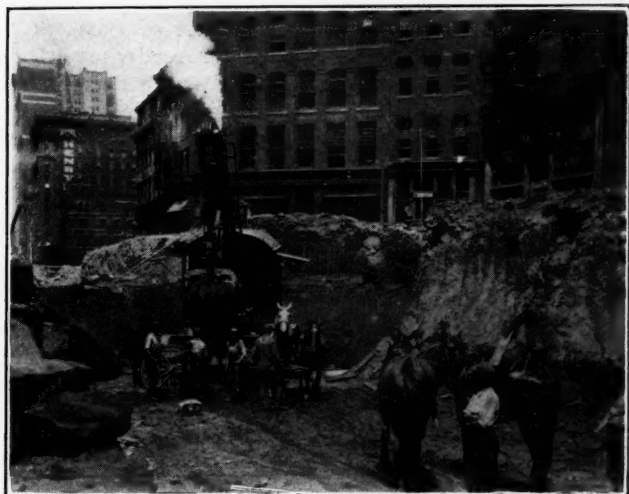
CUTTING IN FIFTH AVENUE AT GRANT STREET, 14.9 FEET DEEP.

Carnegie building at the right, Frick building next; court house and jail in the distance.



but it is not found possible to employ enough wagons at this point to keep the shovel working at this rate. So far the contractors have exceeded the amount of earth which they were expecting to excavate daily and the city officials are well pleased with the progress. At the time of writing this article it was expected that delivery of ties and rails and Ligonier stone blocks for rebuilding the Fifth avenue street railway track would commence on or about July 22, and Director Armstrong expects the street railway traffic through this street to be resumed by August 15.

As already stated, much of the rebuilding and remodeling is being carried on at the same time as the street grading. The Mellon Bank building, a hotel and a large department store, three of the largest buildings on Fifth avenue in the hump zone, are already being remodeled to conform with the new street grade. The 15-story Carnegie office building is expecting to make alterations costing \$75,000, by which an additional story will be added below those already in use. This was the first large office building to be erected in Pittsburgh. The 20-story granite Frick building is to be altered at a cost of \$100,000, and alterations of the Allegheny County court house and jail will cost about \$25,000. These three buildings were constructed



STEAM SHOVEL MAKING 16.3-FOOT CUT IN FIFTH AVENUE. Street to be widened by taking 10 ft. off the buildings on the right.

at the time of their erection so as to conform with the new street grades which will result from the work now under way, and the designs for the changes have in each case been made by the original architects. One of the first important new buildings to be erected in this district will be a new 12-story brick and ornamental terra cotta building, erected mainly for the purposes of supplying offices for attorneys who desire to be quartered near the court house. The first floor of this building will be given over to storerooms. This building will be located at Fifth and Wilev avenues, and at Fifth avenue and Grant street will be erected a new 12-story office and store building.

#### POWER FROM SEWAGE

IN our issue of July 18th we referred to the project now under consideration of utilizing the sewage of the various municipalities along the Niagara frontier between Buffalo and Lewiston, by collecting the sewage into a tunnel and discharging it into the river below the falls. H. J. Knapp, a director of the North Tonawanda Board of Trade, desires us to state in connection with this that the project, which was originally proposed by him, includes also the treating of the sewage before discharging it into the river; the scheme thus furnishing a double advantage, as the sewage referred to is now discharged directly into the river.

#### A CITY PLANNING COMMISSION

At the recent conference of Mayors' Association of the State of New York, the following resolution was offered by Mayor Irving, of Binghamton, and adopted:

*Resolved*, That it is the sense of this conference that every city should have a committee on city planning. That the Mayors should be urged to take this matter up immediately upon their return to their respective cities with a view to the appointment of such a commission.

That the advisory committee appoint an advisory committee of experts on city planning to advise and assist the local commissions in the development of their respective city plans.

The advisory committee here referred to is a committee of the Mayors' Association, and the committee of experts referred to would thus become in effect a State commission, but with no connection with the State government. This is a somewhat novel idea, but the most significant point in connection with the resolution seems to us to be that an organization containing most of the mayors of the larger cities of the State have become so impressed with the importance of city planning and the desirability that every city in the State have a city plan as a general guide for future improvements, that they have taken such a positive step in this direction.

Along somewhat the same line was another act of this association, which looked to the establishing of a municipal information bureau, it being proposed that in connection with this bureau also a body of advisory experts be appointed. The average city official, said the committee, occupies his position for so short a time and the problems with which he has to deal are so many and so complex that he cannot give serious and thorough study to each of them, and he should not be expected to devise remedies or initiate plans. Rather he should select and carry out the best of the several plans which may be worked out by experts who have given ample time to their preparation, study and compilation. The bureau proposed is expected to assist in work of this kind, some of its functions being:

To gather information and statistics relative to municipal problems and improvements and to distribute them among the officials of the cities of the state.

To keep all municipalities informed about bills introduced into the Legislature and newly enacted laws affecting the cities.

To furnish to any city upon request all available information or statistics relative to any municipal problems indicated.

To keep municipal officials of the State in touch with each other by distributing among them any new plans devised by an official of any department.

In addition, the bureau should also keep officials informed as to the progress of all municipal innovations thus reported to them, so that they might know of their success or failure.

To distribute such reports and other literature relative to municipal government and activities as will aid municipal officials.

This bureau would submit to the advisory experts questions involving technical matters, the bureau and the experts being at the services of the several cities. It was realized that the organization of such a bureau required careful consideration and a study of ways and means, and a committee consisting of the president and several other mayors representing cities of different classes was appointed to study the matter and recommend a plan for financing the bureau and rules and regulations for the management of it; the committee being empowered to establish such a bureau if the plan recommended shall be approved by the mayors of two-thirds of the cities of the State.

This bureau would to a considerable degree perform certain of the services which are rendered in some other States by a regularly organized State bureau, such as the Pennsylvania Legislative Reference Bureau and the Maryland Department of Legislative Reference; except that these were really organized for the information of the State departments rather than of cities, but as much of the law making of the State Legislature has reference to cities, a considerable part of the information obtained and furnished by these bureaus is municipal in its nature.

## CONCRETE ROADS IN MICHIGAN

Report of State Highway Engineer of Minnesota, Based on Recent Inspection at Ann Arbor, Detroit and Chicago

WINONA COUNTY, Minn., finding that macadam highways are becoming more and more expensive not only to maintain but also to construct, last June gave careful consideration to the use of concrete paving in place of it. State Highway Engineer George W. Cooley, Deputy Engineer John H. Mullen and members of the Winona county commissioners inspected concrete pavements in Ann Arbor and Wayne county, Michigan, and in Chicago. The conditions found and opinions arrived at were thus described by Mr. Cooley in his report to the State Highway Commission on July 6:

"Our first inspection was of the concrete pavements at Ann Arbor, Mich. These were laid in 1909 and were 'two coat work,' the base being  $4\frac{1}{2}$  inches of 1-3-6 mixture, with a surface of  $1\frac{1}{2}$  inches of 1 to 2 mixture of cement and coarse sand. These pavements were laid in 25-foot sections with  $\frac{3}{4}$ -inch expansion joints, which were not protected. On the surface was placed a wearing coat of  $\frac{3}{8}$ -inch of sand and bitumen, using  $\frac{1}{2}$  gallon of bitumen and 1-9 cubic foot of sand per square yard. This work was done by the city with labor at \$1.75 to \$2 per day, cement at \$1.07 to \$1.32 per barrel, and gravel 75 cents per cubic yard; the total cost of pavements being from 71 cents to 88 cents per square yard.

"Ann Arbor is a city of about 15,000 population, and these pavements have carried the average traffic of a city of that size, showing no appreciable wear in the concrete excepting on some of the expansion joints. The bitumen surface has worn off in several places and appears to only act as a sound deadener and as a relief from the glare of a white concrete pavement. These pavements are quite noiseless and free from dust.

"At Detroit examination was made of three concrete roads. The extension of Woodward avenue, leading north from the city of Detroit, showed two classes of construction. The first was a 16-foot roadway, 7 inches thick, composed of 1 part cement, 2 parts sand and 4 parts of gravel from  $\frac{1}{4}$  inch to  $2\frac{1}{2}$  inches in size; this work being done by contract. The balance was laid of the same width and thickness, but in proportion of 1:1 $\frac{1}{2}$ :3, with coarse aggregate up to  $1\frac{1}{2}$  inches in size; all of this work being single coat work. The latter work has proved a great deal more satisfactory, partly due to the fact that a smaller aggregate was used and also to the fact that it was handled directly by the county on force account. This road carries a very heavy truck farm and motor traffic and showed practically no sign of wear excepting in some places where expansion joints were not properly tooled.

"Roads constructed in this manner permit of practically twice the loads being hauled that could be hauled on earth or gravel roads. A number of farmers who were questioned in regard to the advisability of that style of construction for rural roads agreed that they are the most satisfactory. There was but one exception, and his complaint was that the concrete surface was hard on his horses' feet. Upon further questioning he admitted that one horse could pull the load on this kind of a road that formerly required two horses, and that his land had increased in value from approximately \$140 per acre to \$250 per acre.

"For a test of comfortable riding on this roadway we drove a machine at the rate of forty miles an hour and at that speed there was absolutely no jolting or unevenness.

"All of the concrete road work now being done in Wayne county (and there is at present 44 miles under construction) is being handled direct by the county road commis-

sioners on force account, and is costing from \$9,000 to \$12,000 per mile, dependent upon the length of haul and character of foundation.

"Upon our return from Detroit, examinations were made of concrete pavements in the city of Chicago. There is considerable two-coat work in the residence districts, which were laid under the Blome specifications, and which have proven satisfactory, although they are cracked in a number of places.

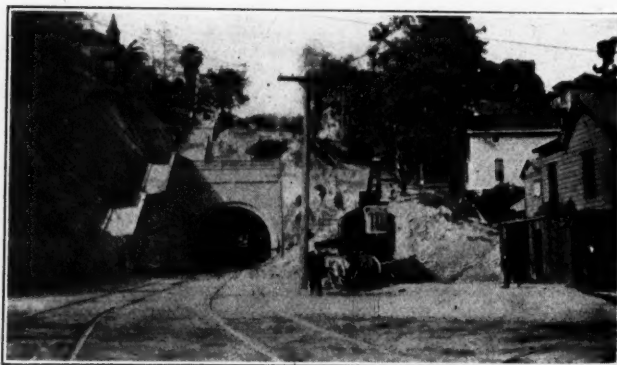
"In one location in the business district of Chicago where the heaviest truck traffic has to pass within a width of 16 feet, there is 400 feet of concrete pavement laid to a thickness of 7 inches with a mixture of 1 cement,  $2\frac{1}{2}$  sand and 5 screened gravel. This pavement was made four years ago without any protection for expansion joints, and is what was called by a concrete man in the city of Chicago a very inferior piece of workmanship. This pavement received practically thirty times the amount of travel that ordinarily goes over our heaviest traveled rural highways and apparently is good for twenty or twenty-five years more. This piece of work would indicate that where the concrete has a good foundation and expansion joints it will wear well under heavy traffic.

"I believe that in most localities a width of only 8 feet is necessary and that it should be 6 inches in thickness, of a mixture composed of the very best of Portland cement, clean coarse sand and hard screened gravel from  $\frac{1}{4}$  inch to 1 inch in size and laid in proportion of one of cement, two of sand and four of gravel. Where good workmanship is to be had it is not always necessary to place steel protection for expansion joints, and on grades of less than 5 per cent. I would eliminate the grooving, although on steeper grades than that I believe it is necessary.

"Concrete roads are dustless and capable of transporting at least twice the loads with same motive power that could be hauled over gravel or earth roads, and for pleasure vehicles cannot be excelled, as they are absolutely free from jolts and ruts. There is also the advantage that they require no maintenance, and it is a well known fact that lack of maintenance is the cause of failure in nearly all of our improved roads."

## DOUBLE TUNNEL STREET IN LOS ANGELES

WORK has been begun on a second tunnel at the head of Hill street, Los Angeles, Cal., which will parallel the tunnel which is now used for an electric railway exclusively, while the one under construction will be for general traffic. Foreseeing the ultimate need of the second bore, when the first was constructed, the city paid \$11,000 to the railway company to construct a shoulder on the east retaining wall of this, and one side of the arch of the new tunnel will rest upon this shoulder. This work will cost \$126,079.60, to be assessed upon the district benefited by the improvement. The bore will have a length of 546 feet, will be 32 feet wide, and will be lined



STEAM SHOVEL BEGINNING STREET TUNNEL.



with white tile and brilliantly lighted by electricity. Creosoted wooden blocks will be used for the pavement, as they produce less noise under traffic than other paving. A total of about 16,000 cubic yards of earth will be removed for the tunnel and its portals, and at the present stage of construction a steam shovel and motor trucks are being used for this purpose.

Owing to the number of hills close to its business center, Los Angeles has been forced to construct a number of street tunnels in the past few years to relieve the congestion of traffic. During the building of the Hill street railway tunnel very extensive cuts had to be made, which left houses standing upon a 40-foot cliff after the approach for the tunnel had been excavated. Some of these it was found necessary to remove, while others suffered less, and were partially compensated for the loss of their front yards by the elaborate concrete stairway leading to the top of the hill.

## EXCESS CONDEMNATION

### Operation of Massachusetts Law Providing for It—Boston Illustrations of Disadvantages of the Plan in Practise

IN a paper before the Fourth National Conference on City Planning, James A. Gallivan, street commissioner of Boston, Mass., discussed the subject of "Paying the Bills for City Improvements," and in this connection considered the "excess condemnation" method, which has been urgently advertised in many quarters during the past year or two, but which he did not unqualifiedly indorse. Concerning it he made the following comments:

This system has been favored elsewhere because it enables the city to take over the remnants or odds and ends of estates which in some of our thoroughfares, as well as in those of New York, have led to a motley and irregular frontage, offensive to lovers of symmetry in construction and actually detrimental to the growth of business in the streets affected. Its advocates, moreover, argued from the experience of foreign cities, that it would enable Boston to pay the whole cost of its street improvements and even reap a profit, where now the only question is the extent of the loss. This seemed to a good many of us at the time a rather roseate view to take, for if the full benefit to the estates within a radius of 125 feet is seldom equal to one-half the cost it would seem difficult for the city to recover the whole cost by taking over the title to the same property, holding it for a term of years, and then reselling it.

However, at our State election last year the people adopted this constitutional amendment. Briefly stated, it permits the legislature to pass acts for street improvements wherein more land than is required for the street may be taken, the same to be sold after the completion of the improvement. This amendment had been agitated for many years by people who honestly believed it would cause a revolution in the methods of making highway improvements. The advocates of this measure also believed that it would help to solve the question of a city beautiful, because, as I have explained, the city could control the use of the excess land taken by placing upon it restrictions as to the character of buildings to be erected, their height, use, and anything else which would satisfy the esthetic tastes of the community. In this respect they are undoubtedly right, but, if our study of the problem amounts to anything, they will fall far short of their expectations on the financial side.

Soon after the adoption of the constitutional amendment the board, of which I am a member, made an exhaustive study of this method of city highway development, with results which I think will interest you. I will take but two examples of the study, and I select them because they are widely different in the manner in which they work out.

Nothing is more needed in this city than a broad highway connecting the two terminal stations. Such a highway is particularly needed for teaming traffic and for the transportation of passengers. A plan for such a highway has been prepared. It proposes not only the widening of existing thoroughfares, but also the making of an entirely new way through property which has a high market value. The proposition is for a way 100 feet wide. It would be without doubt of tremendous value to a very large section of the city. The assessed value of the property which would be taken for the way itself is \$8,118,811.

If only remnants of estates which would be affected by the improvement were taken \$3,804,889 would have to be added.

It is thought that, if the fullest use of the excess condemnation principle is to be applied, takings for a distance of 125 feet from the line of the improvement ought to be made. To make such a taking would involve property having an assessed value of \$7,875,700, making a total assessed value of all the property involved, \$19,799,000.

This is a pretty large sum for a city whose borrowing capacity is less than one-quarter of this sum. Bear in mind that this is only the assessed value. When property is taken for public purposes it is rarely obtained for the assessed value. Perhaps in a case such as I am discussing, where the property has a large and sure rental value, the city might be required to pay as high as 50 per cent. over the assessed value for such as would be taken. This would add \$9,899,500 additional to the foregoing figures, making the total about \$28,698,500 for land and buildings.

To get this vast sum back into the city treasury it has been estimated that the excess land would have to sell at 153 per cent. over its present assessed value. Can you conceive of such a tremendous enhancement of values merely because the city has laid out a broad highway which would be devoted largely to transportation purposes? For myself I confess I cannot see such a great increase in values immediately following such an improvement. If such an improvement should be made, under the conditions I have described, ought the city to hold the excess property taken until such time as it would be sold at the advance named? What would the city do with the property while awaiting a favorable market? Ought the city to put it in order for occupancy and rent it during the time it has it on its hands? It seems to me that our constitutional amendment does not contemplate anything of the kind. I doubt that the city could even put new fronts into buildings that had been partially destroyed, and if it cannot do this, imagine what an unsightly condition a street would be in, with the interiors of buildings exposed with hideous effect.

Unless the city could improve such buildings and rent them while awaiting a favorable market the disadvantages of such a method of street improvement would be far greater than any possible benefits. There would, in addition, be the loss of taxes, no inconsiderable item, and the interest on the money borrowed for the undertaking.

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If a broad highway, such as is proposed between the north and south terminals, is to be laid out, I believe it can be done without great cost to the city and without invoking the aid of the excess condemnation law, by extending the assessable area and by assessing the benefit rather than 50 per cent. of the cost. I would create a zone for assessing purposes. This zone could be made wide enough to recover back practically all that the improvement would cost. If a tunnel is to be constructed under the street for the railroad, as has been proposed, I would have the railroad pay a fair portion of the cost of the construction of the highway.

The zone system of assessments could be justly applied to an improvement of this character, because it would be an improvement which would be of benefit to almost the entire business district of the city by giving the wholesale and retail houses better and more rapid facilities for carrying on their business.

On the whole, however, I do not see any great benefit in excess condemnation methods except in isolated cases. The advocates of this method, from what I have been able to glean, have had the impression that it was a great success abroad. The principle has been well tried in London, and it is not a success there, viewed from the standpoint of cost. As showing its failure in this respect, I will quote a paragraph from the report of the London Traffic Branch of the Board of Trade, made in 1908, as follows:

"It is difficult to make any direct comparison of the relative advantages of widening old and making new streets. Both operations are necessarily costly. It is often supposed to be more economical to make a new street if enough land is taken, but the expectation that the disposal of valuable sites fronting an improvement repays, or nearly repays, the original outlay is seldom borne out by experience. The most striking example of success attending an operation of this kind is Northumberland avenue, where the amount realized by the disposal of surplus land exceeded the cost of the improvement by 119,000 pounds (\$595,000). This amount was, however, arrived at without taking the charges for interest on the outlay into account, and these charges could not have been small, since some six years elapsed after the completion of the improvement before any of the surplus land was let. The satisfactory result in this case was due mainly to the fact that the operation did not involve the acquisition of valuable trade

interests, and that land in such a central situation was much in request. The street, moreover, is short. A new street of considerable length is apt to fill up slowly, and as years may elapse before all the building sites are disposed of, a large addition to the net cost may have to be made by way of interest."

From studies of the board, of which I am a member, I am convinced that here in Boston we would get similar results.

Answering then the query, Who shall pay the cost of city planning? I believe there is no good reason, moral, legal or economic, why the millions expended by our American municipalities for streets, sewers, parks, sidewalks, water-front improvements and subways should not be returned to them in generous proportion by land owners who reap such tremendous resultant profits.

## FRENCH WATER PURIFICATION TESTS

### Ultra-Violet Ray Sterilizers Effect Practically Total Sterilization—General Conclusions from All the Tests

(Continued from page 112.)

#### ULTRA-VIOLET RAYS

Ultra-violet ray is the name given to light radiations which are of such short wave length that they do not make an impression on the human eye but reveal themselves by energetic chemical action. These are the rays extending beyond the violet in the spectrum, hence their name. Sunlight contains few ultra-violet rays of bactericidal properties, but certain artificial lights, especially those utilizing vapors, give off bactericidal radiations with great intensity. One of the difficulties of using these rays is the fact that glass does not transmit them, but it has been found that quartz or rock crystal is perfectly transparent to them, and as a way has been found to work this almost like glass, tubes of this substance are used for ultra-violet work.

In these experiments the Westinghouse lamp was used, which consists of a quartz tube about .6 inch in diameter and 3.9 inches long, which contains mercury at the extremities, which are slightly enlarged. A vacuum is created in these tubes and when the electric current crosses this it fills the space with vapor of mercury which emits a greenish, dazzling light and very intense ultra-violet rays. The quartz tube becomes very warm, and will not work properly if cooled by direct contact with flowing water. The current used was of 3.5 amperes and 220 volts. The lamp, therefore, consumed a power of 770 watts. In order that the ultra-violet rays may act upon the water, this should circulate under the lamp without any substance opaque to these rays being interposed. The water should not pass too swiftly, as it requires a certain length of time for the rays to act upon the bacteria. Also the water treated should be transparent so that the ultra-

violet rays may be able to penetrate to some distance from the lamp.

Two designs were used in the apparatus employed in this test. In the first the water circulated in a simple channel of zinc 9.84 inches wide and 11.8 inches deep. The lamp was suspended in the middle of the channel above the surface of the water, but as near as possible to it. The most effective average rate of flow of water in the channel was about 1.2 inches per second.

Later the arrangement was changed so as to more completely utilize the radiation of the lamp, the water instead of circulating under the lamp, circulating around it, being separated from it by plates of quartz. The lamp was placed in a sort of box, of which the walls A B C were quartz. The water entered by the conduit T, came into contact with the quartz box, then passed around the three baffles shown, which brought it into two additional contacts with the box, and then left by another conduit. In case the lamp went out an electric appliance immediately stopped the flow of water.

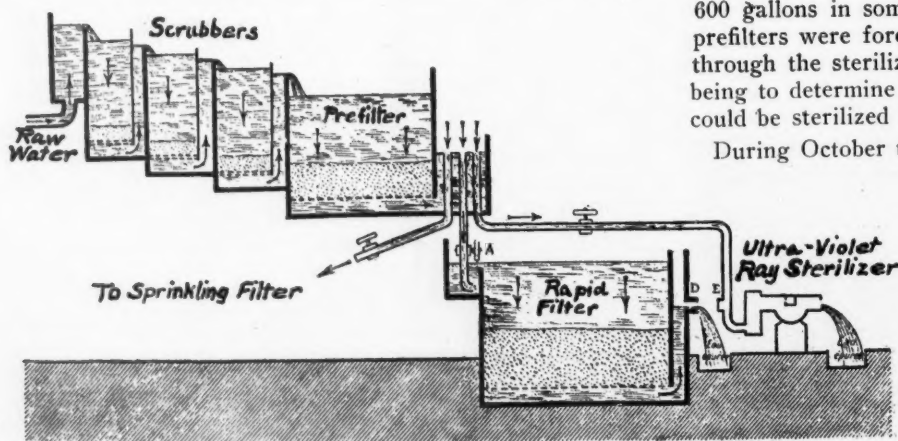
The rapid filter did not appreciably modify the effluent from the scrubbers and prefilter. The sprinkling filter was not found to modify the hardness, but the organic matters were slightly diminished. The sand of this filter was examined to determine whether there was any deposit of limestone, but almost identically the same amounts of lime were found in the sand removed for examination in July and October, although in the latter month the filter had become practically impermeable. It was apparent, therefore, that the loss of permeability was not due to calcareous deposit.

#### RESULTS FROM PUECH-CHABAL SYSTEMS.

The raw water contained an average of 8,917 bacteria per c.c. and 110 B. Coli per 100 c.c. The effluent from the rapid filter showed 405 bacteria per c.c. and an average of 1.5 B. Coli per 100 c.c. The effluent from the filter on which the water was distributed by the Brocq method showed an average of 1,763 bacteria per c.c., and 4 B. Coli per 100 c.c.; and where the Boudet system was used, the averages were 1,646 and 13.6, respectively.

There was a slight diminution of the organic matter by the use of the ultra-violet rays. No oxidation was discovered in the purified water even when the amount treated was reduced to 3,170 gallons per day instead of 52,836 to 105,670. During the months of June and July the effluent from the prefilters was treated directly by the lamp, the volume of water being constant at 52,836 gallons per 24 hours, the water passing under the lamp through a simple rectangular trough. During the month of November prefilter effluent was again used, and as the final filters were not employed the amount was increased to as high as 158,508 gallons per 24 hours, and even 216,600 gallons in some experiments when the scrubbers and prefilters were forced. The water in this case was passed through the sterilizer shown in the illustration, the object being to determine the maximum prefiltered effluent which could be sterilized by this type of apparatus.

During October the prefilter effluent was further treated



PUECH-CHABAL APPARATUS.

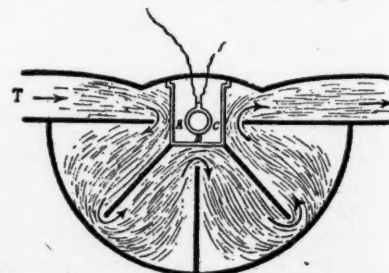


FIG. 7.—ULTRA-VIOLET RAY STERILIZER.



on the final sand filters at the rate of 2,209 gallons per square yard per 24 hours in the case of the rapid filter, the head on this having been increased, and by connecting the points D and E, Fig. 7, by a short pipe, the effluent of this filter was sent directly to the ultra-violet ray apparatus. It was calculated that the average amount of water treated by the latter varied from 119,000 to 145,000 gallons per 24 hours.

During the first ten days of June the lamps were not working properly, and if these be excluded the results for

#### GENERAL CONCLUSIONS FROM TESTS.

In its general discussion of the results of these experiments, the commission states that it is quite desirable to adopt that system of clarification which is most effective in removing micro-organisms; among the reasons given for this being that the clearer the water the more perfect the sterilization; also, if for any reason a sterilizer should for a short time operate imperfectly, the final effluent would be less objectionable. It was found that the different clarifying systems could be made to remove all

#### RATE OF FILTRATION AND BACTERIAL EFFICIENCY OF PREFILTERS

Name of system.	Area of prefilter, sq. ft.	Rate, gals., per acre, per day.	Bacteria in effluent		B. Coli in effluent	
			No. per c.c.	Per cent. of those in raw water.	No. per c.c.	Per cent. of those in raw water.
Siemens-de Frise with sulphate of alumina.....	129.17	17,800,000	712	11.8	12	4.9
Siemens-de Frise without sulphate of alumina.....	226.04	10,200,000	472	7.8	100	41.1
Otto.....	269.10	8,550,000	926	16.4	85	33.3
Puech-Chabal scrubbers.....			5,198	....	363	....
Puech-Chabal prefilter.....	215.28	10,700,000	477	6.0	9	1.9
Puech-Chabal rapid filters.....			189	....	45	....

June and July show the bacteria reduced from 6,940 to 8 per c.c., and the B. Coli from 121 to 0.017 per 100 c.c. This shows a reduction of bacteria of 99.88 per cent., and B. Coli were found but once in 100 c.c. samples of treated water, although more than 1.85 gallons altogether were examined. These results the commission considered very satisfactory. Based on these experiments, the treatment of the 379,000,000 gallons would require 700 lamps and 540 kw. of current. Using the new sterilizer, which was employed in the supplementary tests of November, it would seem to be possible to treat with it amounts up to 53,000 gallons per day. In some cases satisfactory bacteriological results were obtained with a flow of 105,700 gallons, and tests made with still greater quantities would seem to indicate that a flow of more than this amount of prefiltered water could be satisfactorily treated.

In October, using water prefiltered and then passed through the final filters, excellent results were obtained with flows of 119,000 to 145,000 gallons, but it should be noted that the water treated had passed through final filters at the rate of 32.8 feet per 24 hours, and had already been freed from the largest part of the bacteria, this period having been that when these filters were working at their best. The averages for these tests show the total bacteria to have been 8,890 in the raw water, and 3.7 in unfiltered water treated with the lamp, and during the same time 715 B. Coli in the raw water and none in 250 c.c. of that treated with the lamp. Where the water was both purified and filtered before the lamp treatment, the raw water contained 8,144 bacteria, the filtered water 38, and after treatment with the lamp, 2.5; while of B. Coli there were an average of 406 in 100 c.c. of raw water, 3.4 in the filtered water, and none in 250 c.c. of that which had been treated with the lamp.

The general conclusions concerning this system were that the scrubbers, prefilter and filters gave perfect clarification of the water, reduced the bacteria very considerably, but B. Coli were found sometimes in the effluent, although very greatly reduced in numbers. The trickling filters gave results inferior to those of the rapid filters while they were operated, and quickly clogged up. The ultra-violet rays constitute a very efficient means of purification. With the water simply passed through scrubbers and prefilter by the Puech-Chabal system and the trough apparatus, the results obtained were very satisfactory for a flow of 52,800 gallons per 24 hours, and were still more satisfactory with a flow of 105,700 gallons when the apparatus shown in the illustration was used, and when this latter apparatus received water which had also been passed through the filters the purification obtained was extremely satisfactory for a rate of 132,000 gallons.

but 6 to 16 per cent. of the bacteria. The average effectiveness of each of the prefiltering systems, together with the area of the prefilter and the rate of filtration, is shown in the accompanying table. It is seen that the Puech-Chabal system gives much better results in the removal of B. Coli than either of the others, and that it is as effective as either of them in removal of total bacteria.

In selecting a system for the city the commission considered that the chief aim should be to secure as nearly as possible perfect sterilization of the water. On this basis they decided that the Desrumaux process (rapid filtration with alumina coagulation) could not be recommended. The Duyk, although furnishing the best bacterial result, is objectionable from chemical considerations. The rapid sand filter of Puech and Chabal does not sufficiently assure satisfactory and continuous purification. The ozone purification and that by ultra-violet rays furnished results which appear to be uniformly favorable. B. Coli were never found in water treated by ozone and no odor of ozone was obtained in the effluent.

#### COMPARISON OF GENERAL RESULTS OF BACTERIAL ANALYSES

Name of system.	No. of analyses.	Average percentage removed	
		Of bacteria.	Of B. Coli.
Desrumaux .....	55	93.13	95.5
Duyk .....	30	96.03	99.97
Siemens-de Frise.....	55	99.89	100.00
Otto .....	55	99.92	100.00
Puech-Chabal—			
Rapid ("submergé") filter.....	16	96.71	99.7
Trickling ("non-submergé") filter, Brocq .....	21	94.00	99.5
Trickling ("non-submergé") filter, Baudet .....	20	93.22	99.4
Ultra-violet rays, first apparatus...	40	99.88	100.00
Ultra-violet rays, second apparatus*	5	99.86	99.95
Ultra-violet rays, second apparatus†	19	99.96	100.00
Siemens-de Frise prefilter with sulphate of alumina.....	12	88.20	95.1
Siemens-de Frise prefilter without sulphate of alumina.....	7	92.20	58.9
Otto prefilter.....	17	83.60	66.7
Puech-Chabal prefilter.....	14	94.00	98.1
Puech-Chabal prefilter and rapid filter	17	97.61	99.00

\* At double the rate of the others. † Prefiltered and filtered, sterilized at 23 times the rate of the others. ‡ A large percentage of those remaining were of a single variety. § B. Coli found only once.

The experiments conducted did not seem to be sufficient to permit the commission to decide between the two ozone systems tested. As to the ultra-violet rays, under the conditions of the experiment they appeared to be as satisfactory as the ozone. They, therefore, recommended purification by ozone or by ultra-violet rays, combined with preliminary clarification, preferably by the Puech-Chabal system.

### ELECTRIC PUMP ECONOMICAL

TAKING the records for March, April and May as a basis of calculation, engineer Bain, of the Beach pumping plant, figures that the city of Hamilton, Ontario, is saving thirty per cent. in the cost of pumping its water by electricity, as compared with steam. When the waterworks improvements are completed and a large new reservoir built, he is satisfied that the saving will be much larger. He states in part as follows: "We have a very small reservoir. This necessitates practically pumping the consumption of the city in the day time. To do this we have run one steam engine to take the peak load and to help out the turbine pumps. The average daily pumping by steam engine will be about 800,000 gallons. The total daily consumption runs about 9,500,000 gallons. Some days, however, we do not require to use the steam at all, using the turbine engines all the time. The steam pump is used on the average about four or five hours a day. As regards operation, the turbine engines require but two operators, each working a twelve-hour shift. The steam plant requires four men—two engineers and two firemen—one engineer and fireman each shift of twelve hours. If we had a reservoir of say 50,000,000 or 60,000,000 gallons capacity, we would then be in a position to close down the plant altogether during the peak load period, and allow the city of Hamilton to utilize the peak load for lighting and power.

I have no hesitation in saying that electricity is much cheaper, and under more advantageous conditions would be cheaper still. For instance, in February the total cost of pumping was \$60.89 per horse-power by the Gartshore Beam pumps; \$40.04 by the Osborn-Kelly pumps, and by the electric, \$30.68. In other words, each million gallons pumped by the Gartshore cost \$9.10, by the Osborn-Kelly pumps, \$5.95, and by the electric pumps, \$5.17. It must be understood, too, that the old Gartshore pumps have been in service 53 years. We are putting in four more turbine engines, and when the equipment is complete will be able to pump water as cheaply as any place in the world. and do it with electric pumps at a great saving to the city. At the present time we are saving at least \$300 a month by using electricity in place of steam."

### SUPREME COURT DECISION ON BENSE ACT

In our issues of December 14, 1910, and September 27, 1911, we recorded the decision of the lower court with reference to the constitutionality and interpretation of the so-called Bense act of the State of Ohio, an act passed by the general assembly in 1908 for the purpose of protecting the waters of Ohio from pollution by sewage and other wastes and giving the State Board of Health authority to investigate water and sewage purification works and compel their effective construction and operation. The Supreme Court of the State has recently handed down a decision as to the constitutionality of the act, both parties to the controversy having agreed to appeal this question only to the Supreme Court. The decision of the court is quite lengthy, occupying about 17 octavo pages. The constitutionality of the act was attacked on the grounds that it provides for compulsory arbitration and is therefore in conflict with the State constitution; that it coerces city officials into compliance with the orders of the State Board of Health, and controls their discretion by severity of penalty, and therefore is in conflict with the constitution of the United States; that it delegates the taxing power of the city to the State Board of Health, and, fourth, that it does not have uniform operation throughout the State and is therefore in conflict with the State constitution.

The first contention was based on the provision of the

State constitution that every person shall have remedy by due course of law for an injury done to him. The Supreme Court holds that as the Bense act provides for the submission of any order of the State Board of Health to the arbitration of men skilled in sanitary work, which is a far more liberal provision than are many of the statutes relating to the powers of this Board, the objection is groundless.

The second contention was based on the provision of the United States Constitution that no State shall abridge the privileges or immunities of citizens or deprive them of life, liberty or property without due process of law. The court held that the Bense act in no way violated this provision.

The third objection appeared to be based on the idea that the prevention of the pollution of the stream was not for the benefit of the city, but for the benefit of others, and therefore that the city alone could not be legally taxed for it. But the court holds that the city possesses no absolute right to discharge its sewage into streams of water, thereby polluting the same, and that taxing the city to raise money for treating its sewage is therefore not illegal.

The fourth contention seemed to the court to be the most difficult one to decide. It was based upon the provision of the Bense act "that no city or village that is now discharging into any water which separates the State of Ohio from another State shall be required to install sewage purification works as long as the unpurified sewage of cities or villages in any other State is discharged into said river above said Ohio city or village." The contention here was that this was a general law, but did not have uniform operation throughout the State. But the court held that there was justification in the distinction made, and that in fact it was fully consistent with the purposes of the act, this purpose being the protection of streams *within* the State against pollution. The court therefore holds that this is not an unjust or unfair discrimination or false or faulty classification.

In view of its decision on each of these four contentions, the court therefore holds that the act is constitutional. This decision is the more pleasing to the State Board of Health as its members had practically given up hope of a favorable decision, having been assured by counsel that the fourth contention was well founded.

### WATER SUPPLY OF ROCHESTER, IND.

A NEWS item which appeared in local papers and elsewhere a few weeks ago stated that water from a driven well in Rochester, Ind., had been found to contain typhoid germs and that there was fear that the entire underground supply was polluted, which would necessitate the abandoning of practically all of the supplies in the city. We are informed by M. O. King, Health Commissioner of Rochester and of Fulton County, to whom we applied for confirmation of this news, that the statement referred to was considerably distorted. He writes: "We have driven wells all over the city from which citizens obtain their drinking water, and it is all of the very best quality. We have four public drinking fountains fed by driven wells which are equally good. Recently I condemned one from the fact that the pit in which the pump was located had a leak from the street, and water would fill the pit partially full during a heavy rain. In some manner this polluted water would get into the pipe and no doubt contaminated it. After this leak was repaired the pit became perfectly dry and the water in the best condition.

"Relative to typhoid fever or even infection from B. coli, will say we have had practically none for ten years. I think I am safe in saying that we have had not to exceed 15 cases in the last ten years."



# Municipal Journal

Published Weekly at

50 Union Square (Fourth Ave. and 17th St.), New York

By Municipal Journal and Engineer, Inc.

Telephone, 2805 Stuyvesant, New York

Western Office, 1441 Monadnock Block, Chicago.

S. W. HUME, President

J. T. MORRIS, Manager

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A. PRESCOTT FOLWELL, Editor

F. E. PUFFER, Assistant Editor

## Subscription Rates

United States and possessions, Mexico, Cuba.....\$2.00 per year

All other countries..... 4.00 per year

Entered as second-class matter, January 3, 1906, at the Post Office at New York, N. Y., under the Act of Congress of March 3, 1879.

## CHANGE OF ADDRESS

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Contributions suitable for this paper, either in the form of special articles or of letters discussing municipal matters, are invited and paid for.

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AUGUST 1, 1912.

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## Assessing Paving Costs

Two opinions have been handed down by the Supreme Court of the State of Washington, as recorded in our issues of July 11 and July 25, which raise the interesting question of whether the courts in other States would render similar decisions, and if so, what effect this would have upon the rights of municipalities in assessing the cost of paving, sidewalk construction, etc., done by them. In general the court, in these two decisions, holds that in doing work of this kind which is afterwards to be assessed against the abutting property, the city "acts in its proprietary capacity as agent of the property owners, and it must promote the interest of the owners, and may not place a burden on them in violation of the rule of law requiring an agent to serve the interest of his principal." The particular act ruled against in these cases was that of paying a higher rate of wages to the municipal employees engaged upon this work than was being paid by local contractors for similar services. The court held that the city had no right to charge the property, in its assessment, a cost of construction involving these higher wages, but that "the owner may have a reduction of the assessment against his property in equitable proportion to the excess sum paid as wages."

This ruling was made to specifically apply to special assessments, but we can see no reason in common sense and equity—whether or not there is a law—why the same ruling should not apply to other services performed by the municipal authorities as agents for groups of citizens, or for the city as a whole. In other words, the same argument would seem to us to apply to all municipal work, and make it compulsory on the city to carry on this work on a business basis, making all purchases both of materials and labor at the best obtainable market prices, and without favoring local labor or dealers if this would increase the cost of the work.

## Popularity of Municipal Expositions

THE study of municipal conditions has during the past few years become so popular that at least one European city has taken advantage of this in endeavoring to attract to it tourists and residents. Dusseldorf, in a page advertisement in an English paper setting forth its various attractions, makes most prominent of all the statement that during July to November of this year there will be held there an exposition of municipal institutions. This will comprise "plans and models of the newest inventions and appliances in regard to municipal institutions; enlargement, improvement and embellishment of cities; creation of parks, squares, manufacturing and workmen's quarters, public buildings, water works, baths, rapid transit, hospitals, places of amusement, cemeteries, etc."

The highest point of interest will be reached from September 23 to 28, when a Congress of Municipal Methods will be held, which to a certain extent will be international in character. The object of this congress will be a general exchange of opinions and the discussion of all subjects relative to methods by which the greatest degree of perfection in city building and management may be attained.

The exposition is under the protection of Prince August William of Prussia and the committee is composed of the Governor of the Rhine Provinces, the presidents of the different districts and the mayors of the principal cities of this part of Western Germany. The general secretary has especially requested that our consulate make known the committee's wish, that the people of the United States be invited to attend.

## Power from Milwaukee's Garbage Incinerator

A FEW weeks ago we published a news item stating that the city of Milwaukee had found it impossible to use, for running certain of its pumps, electric power delivered by its garbage incinerator, because of legal restrictions. As this seemed to us a peculiar condition of affairs, we requested Commissioner of Public Works Fred G. Simmons to explain the reason for it, and in reply he states as follows:

"The State of Wisconsin has a public utility law which is designed not only to protect the public, but also to protect corporations which have entered the public utility field, by eliminating unnecessary competition. The railroad commission has full power to regulate rates.

"In this particular case the previous city administration was proposing to utilize some of the power generated at this plant (the garbage incinerator) to light the streets of the city, which work is now being taken care of by a local company under an advantageous arrangement. The railroad commission has ruled that the city could not enter the electric light field, even in its own service, where such lights must be installed on the public streets, without first securing certificate of convenience and necessity from the commission. The city has now petitioned for such a permit but this phase of the case has not been decided.

The citizens who secured the injunction restraining the operation of the plant have stated that they would have no objection to the use of this current for the purpose of operating pumping stations, flushing tunnels or other municipal work of this kind, but they do oppose the installation of street lighting on the ground that, as this plant cannot take care of all the street lighting, the result of dividing it would not be advantageous to the city."

### THE PORTSMOUTH INCINERATOR

THE Portsmouth, Va., incinerator, according to the annual report for the year 1911, received and destroyed during the year 8,832 cart loads of garbage and "trash," which was estimated to weigh 4,182½ tons. Chas. E. Murden, street inspector, states that during the ten months from March 1, 1911, to the end of the year there were removed from the streets 6,910 loads of garbage and paper, and during the same time 9,289 loads of non-burnable trash was hauled to the dumps. The garbage and paper were collected at an average cost of 39.4 cents per load and the non-burnable trash at a cost of 23.5 cents per load. The total amount of garbage, paper and trash was 16,199 loads; the total cost of hauling it was \$4,890. During the months of March, April, May, October, November and December, four carts were employed hauling garbage and paper to the incinerator, while during June, July, August and September six carts were used. During March, April, May, June, July, October, November and December four carts were used daily hauling trash to the dumps, while during August and September six were used on account of the annual cleaning up of grass, weeds and other trash. Four men were employed with the street sweeper; four in cleaning gutters and cesspools; two in handling garbage and trash, and one cleaning the main business streets.

The cost of destroying the 8,832 loads at the incinerator was as follows, according to Paul E. Whitehurst, the superintendent of the incinerator:

Cost of labor in operating the plant.....	\$1,709.22
Superintendent's salary.....	120.00
Fuel.....	272.50
Miscellaneous.....	31.95
Total.....	\$2,133.67

This is approximately 6½ cents per ton for fuel, or 51 cents per ton of material destroyed for all expenses. In his annual report, Mayor Reed states that if interest on the plant is added this would increase the cost by 25 cents, making it 76 cents per ton, while the cost of hauling would still further increase it to \$1.46 per ton. Nothing is allowed in this estimate for depreciation, for which there should probably be added 30 to 50 cents per ton more.

### GRAVITY CONVEYING OF CONCRETE

THE economy of conveying concrete from the mixer to the several parts of a large concrete construction by means of spouts or flumes is now pretty generally known, and is quite commonly used where conditions permit of it. Suggestions and instructions for properly preparing and handling concrete by this method are give in a recent pamphlet issued by the Chain Belt Company, as follows:

In placing concrete by the gravity system there are three operations: The mixing of the ingredients, stone, sand and cement, in a suitable batch mixer; hoisting of the mixed concrete by skip to an elevated hopper; and the transferring of the concrete through pipes leading from this hopper to the point where it is desired to be poured.

The following general instructions for operating a spouting system may be of value:

1. Run about 10 feet of water in skip.
2. Charge mixers, using mostly sand with the cement and plenty of water.

3. Run up skip with water and drop at once, following up as quickly as possible with a charge of concrete.

4. Run the mixture so that it may have the consistency of a thick gravy, so that when it levels off the rock is seen held in suspension. If when dumped in skip it stands up, it is too thick; if it levels off and shows 1 inch of water, it is too thin.

5. There should be a man in the tower to operate the concrete gate on the hopper to regulate the flow of concrete through the pipes. The stream should fill about one-third of the conveyor pipe and the charge should be so timed that the stream will be as continuous as possible.

6. The continuous and successful running depends on the uniform mixture. Be careful not to get it too thin. After a shut down of over 10 minutes, flush the pipe by sending up 10 feet of water in the skip.

7. At the end of the day's run clean out the mixers with two charges of water. Send these through the pipes.

8. All pipe joints should be oiled with thick grease so as to prevent sticking.

It is in general not advisable for any contractor to use the gravity system for the first time on a job of less than 2,500 cu. yds. However, it has been successfully used on jobs as low as 250 cu. yds. In these cases the apparatus was on hand and the men were acquainted with its operation.

### CONCRETE PAVING IN BOISE CITY

ABOUT three miles of concrete pavement were built in Boise City, Idaho, during the year 1910-1911. The city engineer's office has received numerous inquiries concerning these, and for convenience in replying to them has compiled the principal data concerning them in a table, the greater part of which is presented herewith. In all of these pavements the requirements for the cement were those of the American Society for Testing Materials; the sand was required to have a limit of 30 per cent. voids, and the gravel to range in size from ¼ inch to 2½ inches. In all of the contracts, cement cost \$2.75 a barrel, sand \$1 a yard, and gravel \$1. All of the pavements were built in one course and the surface was finished with a wood float. The pavement was sprinkled for the first seven days after completion and then covered for 28 days with earth. In each case the sub-grade was earth compacted with a 15-ton road roller. The drainage in every case was surface, which was taken care of by cross gutters and valleys. The curbs had already been built, and no special construction was used in the gutters. The specifications were prepared by the city engineer, the contract was let by the Board of Works to the lowest bidder in each case, and the work was supervised by the city engineer and Board of Works.

#### CONCRETE PAVEMENTS IN BOISE CITY, IDAHO.

Dates of contract	Sept. 7, 1909.	June 1, '10.	July 25, '10.	Aug. 4, '10.	Sept. 2, '11.	Feb. 6, '12.
Do. acceptance	Aug. 1, '10.	Nov. 14, '10.	.....	.....	.....	.....
Traffic in 8 hrs†	445	.....	401	291	.....	163
Nature traffic	25% 2-hrse. loaded, 50% 2-hrse empty.	Ailey.	25% 2-horse loaded, 35% 2-hrse empty.	.....	40% 2-horse loaded, 35% 2-hrse empty	.....
Pavement:						
Length, ft. ....	2,880	3,600	4,850	5,045	607	
Width, ft. ....	59% 60%	16	40 & 61½	40 & 50	50	
Crown, ins. ....	6 to 9	3, dip.	6 to 9	6 to 9	6 to 9	
Area, sq. yds. ....	20,184	6,878	27,018	27,847	3,482	
Thickness ins. ....	8	6	6	6	6	
Mixture:						
Cement .....	1	1	1	1	1	
Sand .....	3	3	3	3	3	
Gravel .....	7	7	7	7	5	
Joints:						
Longitudinal ..	Alg. curb.	.....	Along curb.	Along curb.	Along curb.	
Trns. intrvs of	25 ft.	50 ft.	50 ft.	50 ft.	50 ft.	
Filler .....	Pitch.	Asphalt.	Asphalt. oil.	Pitch & asphaltic oil.	Asphalt.	
Cont. price, sq. yd.	\$1.155	\$1.10	\$1.09	\$1.15	\$1.04	
Excavation						
Amount, cu. yds.	5,594	1,468	4,112	4,011	490	
Price .....	\$0.48	\$0.70	\$0.60	\$0.70	\$0.70	
Haul .....	.....	3,000 ft.	3,000 ft.	3,000 ft.	3,000 ft.	
Cost of maintenance to date..	\$10.00	None.	None.	None.	None.	

\*No requirement. †And 41%, 40. ‡Vehicles.



## ASSESSING COST OF IMPROVEMENTS

### Local Assessments for Every Local Benefit—Classifying Local and General Benefits—Street Construction—Street Widening

IN a paper before the Fourth Conference on City Planning, Nelson P. Lewis, chief engineer of the Board of Estimate and Apportionment of New York City, discussed the subject of assessing the cost of improvements, especially street opening and widening. The correction of defects due to lack of proper planning, being generally the widening and rearrangement of streets in built up sections, will, said he, generally affect property which has already been assessed for such improvement of the existing streets as was at the time considered adequate for the local needs. These improvements "will, however, improve conditions, increase values, and a part of the expense should, therefore, be placed upon the property benefited. In the more fundamental work of city planning, where unoccupied territory is being developed, the cost of the acquisition and construction of new streets can properly be assessed according to benefit, such benefit representing the entire cost in the case of local streets and a portion of the cost in the case of thoroughfares of metropolitan importance.

"One principle should be invariably recognized, namely, where there is local benefit there should be local assessment. No improvement, however small or however large, will be of equal benefit to the city, and to distribute the burden of paying for it over the whole city according to taxable values is unfair, in that it is not followed according to benefit. The owners of property in the immediate vicinity are frequently enriched at the expense of those whose holdings are entirely outside the district directly affected." A possible exception would be such public structures as bridges, docks, etc. The proposition is to assess benefits on property benefited rather than to pay for them out of the public treasury; and this might discourage agitation for and the execution of many desirable projects; but Mr. Lewis' reply to this is that if the proposed improvement is not wanted badly enough by a district to induce it to pay for it, it had better be deferred until its desirability is more practically appreciated.

The real difficulty in carrying out this idea is in the practical problem of determining the relative benefits by which to apportion the assessment. These benefits must be determined in advance, as the law requires that the method of payment must be arranged before the work is begun. "We must determine to what extent the benefit will be strictly local, in what degree it will extend to a larger tributary area, and again, how much it will mean to the entire city or metropolitan district. In the case of residential streets, the purpose of which is to give light, air and access to the developments located upon them, the benefit will be entirely local, and the entire cost can properly be imposed upon the abutting property. When a highway is given a more generous width in the expectation that it will be called upon to accommodate a certain amount of through traffic, the benefit is more extended and the assessment in such a case may be prolonged to a line mid-way between it and the next street of more than residential width. The major part of the cost, however, should be confined to the abutting property, so that the cost to it should be somewhat more than that of the narrower streets. In the case of arterial thoroughfares, or in that of the first street to be opened through an undeveloped territory, the effect of which will be to give access to and to stimulate the development of a large area, the district of benefit will be correspondingly enlarged. Again, in the case of thoroughfares of exceptional width, which it is proposed to treat as boulevards, the entire city

or metropolitan district will be substantially benefited and should bear a proportion of the expense. In fact, the State itself may derive an advantage which would justify its assumption of a portion of the cost, but the disposition to recognize such an obligation on the part of the Commonwealth is exceedingly rare, even though a great city within its limits may, through its large taxable values, contribute the larger part of the State's revenues by which its rural highway system is maintained.

"In the case of parks, this same principle might be applied. Some small parks are of strictly local benefit, and their cost could properly be placed upon the district in which they are located.

"In the case of street-widening or the cutting through of new streets, the local advantage is less marked, though it will always follow. The mere fact that a widening or extension is required to accommodate traffic is conclusive evidence that the street has assumed more than local importance. The width of the roadway as widened is not an index of its local or general importance. There may be cases where the opening of a new street of a width commonly given to local streets and extending for a very short distance would, on account of its strategic position be of very great general and of little local benefit.

"It is quite apparent that the relative local, district or general benefit of any street or other improvement can be determined neither by its dimensions nor its cost. An improvement involving an expenditure of \$1,000,000 in one part of the city may be more distinctly local in its beneficial effect than one costing \$50,000 in another section. No fixed rule can be established to govern the distribution of expense. It must be determined in each case after a painstaking investigation. Such investigation should not be entrusted to a different individual, board or commission in each case. There should be a permanent body which should act in all cases. This body should not be large, and it should be so constituted that its entire personnel could not be changed at once, thus insuring continuity and consistency of policy. They should be broad men whose training should have fitted them for their difficult and delicate duties. The misleading evidence commonly called expert testimony as to existing and prospective values will be of little value to them. They should be capable by experience and intelligence of forming their own conclusions.

"While no definite rule can be adopted to govern the distribution of assessments representing the district and general benefit, it should be possible to prescribe a method of determining the amount and extent of local benefit, particularly in the case of new streets, boulevards and parks. Let us assume that sixty feet is the normal width required for a local street; then the entire cost of acquiring and improving all streets sixty feet or less in width may properly be placed upon the property within a half block on either side of the street. In the case of wider streets that proportion of the cost represented by the ratio which sixty feet plus 25 per cent. of the excess over sixty feet bears to the width of the street would probably be an equitable proportion to assess upon the local district. Inasmuch as property fronting a wide street is more valuable, it would be manifestly unfair to adopt a rule which would result in making the cost of a seventy or eighty-foot street less to the abutting owner than would have been the cost of a street sixty feet wide. On the other hand, after a street reaches certain proportions, additional width will not involve additional benefit. It may be assumed that a share of the expense which would be equivalent to paying for a street eighty feet wide should represent the limit of local assessment. This limit would be reached under the rule proposed when the street becomes 140 feet wide. The percentage of cost which

would be locally assessed would, therefore, be as follows for various street widths: 60 feet, 100 per cent.; 70 feet, 89.3 per cent.; 80 feet, 81.25 per cent.; 90 feet, 75 per cent.; 100 feet, 70 per cent.; 120 feet, 62.5 per cent.; 140 feet, 57.1 per cent.; 150 feet, 53.3 per cent.; 200 feet, 40 per cent.

"In the case of parks the problem is more difficult, the amount of local assessment and the extent of the area of local benefit being determined by the size and shape of the park and facility of access to it from other parts of the city. In any case, no rule should be adopted until it has been carefully tested, and it has been demonstrated that the assessments levied in accordance with it will constantly decrease with the distance from the improvement. This decrease should not be directly in proportion to the distance, but in a geometrical ratio. A curve to determine the distribution of the assessment after the limits of the district have been decided has been proposed by Arthur S. Tuttle, assistant chief engineer of Board of Estimate and Apportionment of New York City, in accordance with which about 32.5 per cent. of the assessment would be placed upon the first 10 per cent. of the distance to the outer limit of the area of benefit, 55 per cent. on the first 25 per cent., and 80 per cent. on the district extending half-way to the boundary of assessment area.

"In the case of widenings involving the destruction of buildings, it is suggested that the same general principles be adopted as in the case of new streets, but that they be applied to the land values only. If the streets were less than sixty feet wide, the proportion of the expense for additional land in order to make it sixty feet would be assessed upon the half block on each side, while for all excess over sixty feet the same rule already proposed could be adopted. For instance, if a street fifty feet wide were to be widened to eighty feet, involving the acquisition of thirty feet of additional property, the first ten feet required to make it sixty feet and 25 per cent. of the twenty feet over sixty feet—a total of fifteen feet, or one-half of the cost of the land to be taken—might be assessed locally, the expense involved in damage to buildings being included in the district assessment, or the general assessment, if the improvement were of sufficient importance to involve general benefit. If the same street were to be widened to 100 feet, the local assessment under the same rule would be for twenty of the fifty feet to be acquired, or 40 per cent. of the total land damage, the damage of buildings, as before, being included in the district or general assessment.

"Special cases will undoubtedly arise which would require special treatment, but it is probable that in the great majority of improvements the methods proposed would result in an equitable distribution of the burden. Those who are to pay the bills have a right to know in advance how the costs are to be apportioned, and the formulation of a policy which can be consistently followed is not only desirable, but necessary."

#### BOARD OF HEALTH DESTROYS DOGS

THE Board of Health of New York City on July 16 issued a special order calling for the shooting of unmuzzled dogs in the Borough of Richmond, and may extend it to the other boroughs as well. In the borough mentioned 210 dogs have been examined by the department since January 1, and among these 70 cases of rabies were found. Ordinarily the Health Department has power only to remove dogs for observation and to destroy them if found so rabid or vicious as to unfit them to be at large; but at times of special danger from rabies the Board may, under its general power to abate nuisances and protect the public health, order the killing of dogs running at large in the streets. The order includes all

dogs "loose or at large in any public streets, avenues, highways or other public places—unless held by a leash or chain or muzzled in such manner as to protect persons from being bitten." This order is to be placed in force on the first day of August and remain in force until the first day of November. The Board calls attention to the fact that there is now in force a city ordinance passed in June of last year requiring all dogs to be muzzled or leashed when in streets or public places, and that they should be taken to the pound if found on the streets not muzzled or leashed, and destroyed unless redeemed within five days.

This ordinance, which has not been enforced, should now be, in the opinion of the Health Department.

#### ONTARIO'S NEW HEALTH ACT

THE Province of Ontario, for the purpose of safeguarding the public health, has been divided into seven districts. This action of the Government was based upon legislation passed last session. The older portion of the province is given five of the districts, and Northern Ontario the other two. The exact boundaries of the various divisions have not been announced, nor the names of the seven district health officers who will be placed in charge, but the headquarters for each district have been made known.

London is the central point for the Western district, which, of course, will include Middlesex, and presumably the rest of the counties running down the peninsula to Essex; Huron, Bruce and Grey and the surrounding counties will likely form the district for which Palmerston has been selected as headquarters. Hamilton will be headquarters for the third district, which presumably takes in the Niagara peninsula in addition to Wentworth and other counties. The fourth health centre will be at Peterboro, and the eastern one at Kingston, these two serving as operating points for the eastern half of the province.

North Bay and Fort William will be the points which the district health officers will work in the north, indicating the dividing line there. Temiskaming, with its epidemic-producing mining camps, will be carefully watched from North Bay.

The men upon whose shoulders will fall the bulk of the responsibility for protecting the public health have been carefully selected. In addition to selecting their doctors with the greatest deliberation, Hon. W. J. Hanna and Dr. J. W. S. McCullough, Provincial Health Officer, have given careful attention to the means by which their work can be made most effective. Each one of the seven appointed will be required to take a six months' course of instruction in public health, and pass an examination prescribed by the University of Toronto which, at the request of the Government, has arranged a special course for the district officers. It will include chemistry, bacteriology water and sewerage, epidemiology, and general public health and sanitary matters. Moreover, before they are placed in charge of their respective districts the men will be given a thorough schooling in practical work. They will, during their terms of study, be attached to the Health Department, and will be sent out from time to time to get a first-hand knowledge of epidemics, sewage problems, and similar matters which will come within their province later on.

The district officers will receive a salary of \$2,500 a year and expenses, and they will not be permitted to engage in private practice. Their duties will not be light. The success of the somewhat radical change made in the public Health Act last session, from which the Government expects much, will largely depend upon their work, and to leave them free to do this the Government has removed them entirely from local control. They will act under the supervision and control of the Provincial Board and report daily to the department.



## NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest Under Consideration by City Councils and Department Heads—Streets, Water Works, Lighting and Sanitary Matters—Fire and Police Items—Government and Finance

### ROADS AND PAVEMENTS

#### Favor Road Patrol System

Newark, N. J.—Col. Edwin A. Stevens, State road commissioner, and Robert A. Meeker, State engineer, were guests of the committee on roads, assessments and speedway of the Board of Freeholders one day last week on an inspection of part of the county roads. The inspectors visited places where county gangs were at work resurfacing, and also stopped at spots where the county roads were being encroached upon and where stakes had been laid out for the straightening of driveways. Colonel Stevens and his engineer voiced their approval of a plan that had long been under consideration, of patrolling the county roads in order that the cost of repairs might be reduced to a minimum. For two years or more the scheme had been given much thought and was recently revived by Assistant County Engineer Frederick W. Reimer, who accompanied the party. The idea is to have the 160 miles or more of county roads divided into sections, over each of which an experienced road man should be placed for the upkeep of the roads. The plan has met with obstacles, principally because such section men would not have permanent jobs, since work on the roads is not carried on the year round. It was calculated by the engineers, however, that the employment of experienced section men for the entire year would be less expensive than the present method of road repairing. It was suggested that the reduction in the cost of repairs would more than make up the salaries of the required number of roadmen.

#### Claim New Road is Poorly Constructed

Huntington, L. I.—The section of the new straight road over the north side turnpike of Suffolk county between the Cross-Island railroad in the town of Huntington and the village of Smithtown Branch is completed, but it is said to be in such a poor condition that unusual dissatisfaction is expressed by all the residents of the towns of Huntington and Smithtown along the line of the route, also by automobilists and others who travel over it. It is in sharp contrast to the splendid section west of the Cross-Island Boulevard, which is equal to any of the best park drive. A demand has been made that the money be withheld from the contractors until the road is made right. This is a part of the famous route No. 35, to traverse the entire north and south sides of Long Island and to the completion of which automobilists have been looking forward with much pleasure.

#### New York to Lay "Specimen" Pavements

New York, N. Y.—As a result of criticism of New York pavements made recently by a board of engineers, the city will advertise for bids for the laying of several "specimen" blocks of a pavement which is popular in Europe and which in certain Continental cities has lasted with little repairing for more than twenty years. It is a non-patented pavement, known abroad as the durax, and derives its strength and durability mostly from the fact that the surface blocks are small, carefully fitted by hand, and so arranged that none of the joints are at right angles to the moving lines of traffic. This produces an almost noiseless surface and gives a good foothold for horses. The blocks are made of granite, cut in cubes about three inches on each side. On a bed of ordinary dirt or clay, which is pounded down hard with a ten-ton roller, a foundation of concrete six inches or more, according to the weight of the traffic, is laid, and over this a half-inch bed of granite chips. The granite cubes then are laid on top, fitted to one another as evenly as possible. The interstices are filled with pitch. When completed the street looks like a great piece of mosaic, the lines of the cubes curving off into regular arcs in various directions. The surface at first is slightly rough, but after a few days or weeks of pounding from the steel rims of the vehicles it wears smooth and beautiful.

#### Court Decides Dupont Road Law Valid

Dover, Del.—The law under which General T. Coleman duPont plans to build a boulevard the entire length of Delaware was declared to be valid by the State Supreme Court, which dismissed a writ of prohibition obtained by certain taxpayers who had sought to prevent the building of the road and had raised the question of the constitutionality of the act. The entire court sat in the case, with the exception of Associate Judge Conrad. Before entering the courtroom the judges conferred in their parlors for more than half an hour. When the court assembled Chancellor Curtis announced that Chief Justice Pennewill would read the decision, all five judges having concurred in the opinion as to the point of validity. There was a dissension, however, on the part of the judges as to the acceptance of the journal entry doctrines and the enrolled entry doctrines of the bill on its passage through the legislature. Chief Justice Pennewill held that it was necessary for full entries to be on the journals of the houses to make a bill valid. Judges Woolsey and Boyce took a different view from the Chief Justice, and Chancellor Curtis withheld his decision as to the choice of the two doctrines, saying he would at some future date give his opinion on that point. At the conclusion of the reading of the opinion, which occupied more than one hour, the Chancellor announced that the petitioner should pay the costs in the case. Henry Ridgely, counsel for one petitioner, asked that an exception be noted to the opinion of the court, which was granted. It is understood that the case may be taken to the Supreme Court of the United States for final decision.

#### Albany Widens Walks

Albany, Ga.—Work on the widening of Pine street sidewalks, between Washington and Jackson, has been commenced. They will be the widest sidewalks in the city when completed—a full 25 feet. This improvement, with the new street paving of creosoted wooden blocks and the newly installed "White Way," will make this one of the most attractive business blocks to be found in any city of Albany's size in the State.

#### Experts as Road Foremen

North Wales, Pa.—A practical demonstration of the working of the new State Road law is apparent in Montgomery County, where 50 men are now engaged in making repairs to a number of important roads which have been taken over by the State under the Sproul act. Most of the highways now being reconstructed are dirt roads and when these have been gone over with scrapers, ditches cleaned out, humps removed and culverts repaired, work will be started on some of the stone roads. The work is in charge of Assistant State Highway Engineer W. R. Wolfinger, whose headquarters are at Norristown. Working under him are half a dozen engineers as road foremen, each of whom is in charge of a section of the county. These men are stationed at Ardmore, Willow Grove, Trappe, Skippack and Zieglersville. Some of the work is being done by contract, under the supervision of the road foremen, this being the case with the Welch road, a main highway from Willow Grove to Lansdale.

#### Build Wisconsin's First Cement Highway

Fond du Lac, Wis.—When the contestants in the annual tour for The Sentinel cup reached Fond du Lac they were obliged to slow down to make the turn off from Scott street onto what is known as the Oshkosh road, as they were confronted by a sign ten feet square reading: "Road closed, building the first cement highway in Wisconsin." The Business Men's Association, realizing that the autoists would be somewhat chagrined to make a detour and would want to be shown, embraced the opportunity to make the explanation in a way that would be understood and would at the same time serve notice that on the next run they would encounter at this point the finest stretch of highway in Wisconsin, the first section of the boulevard which is soon to connect Fond du Lac with Green Bay and, it is hoped, may ultimately connect Green Bay with Milwaukee.

### Improving Highways in Haverhill

Haverhill, Mass.—Street work is under way and has been for several weeks. The department is now starting some of the big jobs which have been planned for the year and there will be activity in all branches until the cold weather puts a stop to it. Oil and asphalt are figuring into the problem of road building this season. Expert road builders have united in an expression of opinion that the auto traffic has made necessary a new road building material. Stone with asphalt makes the best, while on the dirt roads the oil acts as a binder and the street surface defies the wear and tear of the auto tires so that roads stand up much better than they did a few years ago. The State road builders have been using the materials to excellent advantage and every city and town has taken an object lesson from this source, engineers uniting in an opinion that oil and asphalt has become the necessary material for street building. The North Broadway work is to be done by the Standard Oil Company process and the company is to do the work at a given price per square yard, it being figured that it will cost about \$900 for the job. The council members inspected some of the Standard company's street work when they went to Lawrence and Lowell, they having contributed three carloads of their oil product for some work that is claimed to have worked out splendidly. If it proves to be as good as it is claimed to be, the city will take the company's entire outfit, for the oil can be bought cheaply enough to make it worth while. If the city takes the local gas company's supply it will have all the oil it needs at all times and will not have to pay any transportation charges for it either. The initial cost is lower and every other extra is eliminated, for the company stores it in vast quantities and would construct a suitable supply station if the city entered into a contract to make it worth while. The company has been selling its oil to out-of-town manufacturing concerns and with transportation charges, preparation for shipment and all, has been getting but little return on its product, so that the opportunity to sell to the city opens up an avenue of profit that becomes worth while, and under such circumstances a liberal discount can be afforded, and this is what gives the city the advantage. Work is now under way at Ward Hill and is practically completed. River street is to receive attention, which it needs badly, and so is High street, which has suffered largely since it was last treated. Broadway will come in for a \$2,000 share, and when these several tasks have been finished there will be others mapped out and more money provided for the work. Under the present system of issuing the bonds piecemeal, the city makes a saving in interest that is worth the time and trouble and fretting that some of the official family members do, for it works out the same in the end, but the mayor has it to his credit that he has accomplished exactly the same things at less cost.

### Gives \$1,000 Toward Building of Good Roads

Milwaukee, Wis.—Country-wide interest in the improvement and maintenance of public highways nowhere is more pronounced than in the Middle West. There are under consideration by legislative bodies and motoring organizations in the Mississippi valley a number of projects looking toward the betterment of road conditions. One of the most important of these undertakings is that by which it is hoped to link Chicago and Milwaukee. Impetus was given plans for this improvement by the contribution last week of \$1,000 toward a \$6,000 fund to be devoted to the building and maintenance of roads in Kenosha county, Wisconsin. The gift was made by Charles T. Jeffery in behalf of the Thomas B. Jeffery Co., of which he is president. With the completion of the proposed Chicago-Milwaukee highway will be established the first leg in a route that will take the motorists from the hills and lakes of Wisconsin over the prairies of Illinois to the Mississippi river at St. Louis. "The gift was made by this company," said Mr. Jeffery, "because we are interested in the building of good roads in Kenosha county and because we appreciate the demand for improvement that is being made by those who have occasion to use our roadways. We are hopeful that this movement will be a general one, for we are in hearty sympathy with those who advocate the cause of improved highways."

### Place Highway Sign Posts in Pennsylvania

Harrisburg, Pa.—The first sign posts to be placed along the highways of Pennsylvania will be put into position this summer by the State highway department, and lists are now being made by the engineers in charge of the operations of the road branch of the State government, so that the localities most in need of markers will receive attention. State Highway Commissioner E. M. Bigelow has let a contract for the first 1,000 sign posts, deliveries to begin next month. These posts will be of iron with the name of the road or town to be shown in iron letters fused on an iron plate, the direction to be indicated by an arrow, also of iron. This style was determined upon after extended investigation in other States and counties. Although the posts and signs are practically indestructible, any attempts to deface or injure will be vigorously prosecuted. Not only the State road maintenance officials but local officers and citizens will be urged to prevent tampering with the sign posts, because of their value to the public. Placing of the posts will be in the hands of a department attache, who will also inspect them when erected.

### Concrete Bridge One of Longest in South

Charlotte, N. C.—The reinforced concrete bridge which is being constructed by the county across the Catawba river at Sloan's ferry will be, when completed, one of the longest inland concrete bridges in the South, and longer than any coast concrete bridge, with the exception of the Galveston causeway and the various crossings between keys on the famous over-sea railroad from the Florida mainland to Key West. The Catawba river bridge, including the span across Sloan's creek on the Gaston county side, will have a length over all of 1,970 feet. This distance includes a measurement of arches and approaches. The bridge proper across the river and the approaches will be 1,670 feet. The bridge is unique by reason of the wide spans, which measure 161 feet each, from center to center; and, also, in the rib type of arch employed in the design of construction. When the bridge is completed, says the engineer in charge of the construction work, it will be without an equal in the Carolinas, and will be a lasting credit to Mecklenburg and Gaston counties, which are jointly responsible for its construction.

### Plan Street Work Plant

St. Louis, Mo.—Plans for a street material distribution and storage yard, whereby the city will be enabled to buy articles necessary for street repair at wholesale and save money, have been worked out by Street Commissioner James C. Travilla and will be put in operation with the passage of a bill now pending in the municipal assembly. The bill provides for a spur track from the Terminal belt line at King's Highway and Bircher street to afford entrance to the proposed material yards in a secluded corner of Penrose Park. After consultation, Park Commissioner Dwight F. Davis and city officials decided the yard would not detract from the beauty of the park. Travilla will keep 40,000 gallons of road oil in four tanks in the yard, enabling him to double the macadam road oiling facilities. At present eight wagons are used for this purpose. "This year we have had difficulty in getting road oil," said Travilla. "Most of the refineries have been oversold and some have refused to bid for the quantities we wanted to buy. When we get our tanks equipped this difficulty will be overcome. The city will save money on freight and demurrage." Other material to be stored at the yard will be macadam, gravel and sand. The city has in operation the recently built asphalt plant, insuring quick repairing, and with the additional facilities that will be afforded by the material yard, Travilla says, the repair department will be in extremely good shape. In order rapidly to distribute the repair material two automobile trucks will be bought and placed at the disposal of the street department.

### Working On New Highway

Kendallville, Ind.—Noble County will soon boast of its first mile and a half of macadamized road. Twenty men and a number of teams are at work in Allen township under the direction of Trustee Baughman. The road will be leveled for the stone which is being shipped from Port Huron, O., and will be placed on the road bed as soon as possible at a cost of \$2,000 to the township.



**Street Supervisor Submits Report**

Salt Lake City, Utah.—Showing an expenditure of \$8,184.25 on maintenance, improvement and repair of public highways, construction and street grading costing \$4,350, the grading and graveling of six street extensions, construction of 1,909.4 yards of cross walks at a saving of 69 cents per yard, and giving a detailed account of the improvement work now under way and completed, the semi-annual report of W. J. Tuddenham, supervisor of streets, has been completed and submitted to the commissioner of street and public improvements. Savings in the expenses with an increase in improvement work are shown in numerous items. While the exact figures are not given, the report shows that improvement work amounting to several hundred thousands of dollars is now under way or about to begin, which will be completed during the latter half of the year. The report shows that under the system of laying crosswalks by the street department instead of under private contract, the cost has been cut from \$1.19 to 50 cents per square yard.

**City Makes Many Street and Sidewalk Improvements**

Park City, Tenn.—During the past several weeks since the election of Mayor W. R. Johnson and officials of the present administration in Park City, many street and sidewalk improvements have been made in this community. Over 3,000 feet of sidewalks have been constructed. Mayor Johnson's administration is enforcing the construction of sidewalks. Much oil has been applied to the highways, bringing about an abatement of the dust nuisance to a large extent. Other forms of street improvement are projected here also.

**SEWERAGE AND SANITATION****War On Rats at Providence**

Providence, R. I.—George H. Robinson of Brown University has been engaged by Dr. Chapin, Superintendent of Health of Providence, to catch rats and make an examination of them for the purpose of determining whether there are any indications of the presence of plague. This work is being done under the direction and supervision of Prof. Frederick P. Gorham, bacteriologist at the University. Dr. Chapin, in speaking of the matter, said: "There appears to be a very remote possibility of the plague entering this port, but still there is the one chance, and it is of great importance that we should know as much as possible regarding the local conditions. Rats are one of the greatest mediums for the spread of this infection and the agitation that is going on will have at least one good effect, that of making precautionary measures more stringent at all ports for keeping rats from getting aboard vessels about to leave port, or leaving vessels that have just entered port. The work in this city will not be carried to any very great lengths. We shall catch a number of rats from along the waterfront and make an examination of them for bacteriological results. Any dead rodents that may be found will be put through a more thorough examination than the live one, for in the dead animal the possibility of discovering plague infection is much greater."

**Claim Cows Drink from Sewage-Polluted Streams**

Boston, Mass.—That the Boston Board of Health's prohibition on the sale of milk from the vicinity of St. Albans, Vt., should continue for some time, until drastic changes have been made in the sewer system of St. Albans, is the opinion of Dairy Inspectors William D. Collins and Arthur L. Gavin, who have returned to Boston after a two weeks' inspection of northern Vermont dairies. Tracing a brook which ran through over 70 pastures, the men discovered that the greater part of the sewage from St. Albans dumps into the brook, known as Stevens Brook. Six samples of the water were taken and forwarded to Dr. O. G. Holton of the State Laboratory at Burlington, Vt., who, the inspectors report, returned them a report a short time after stating that he never saw such polluted water. Many typhoid and diphtheria germs were discovered in the water. The inspectors in one afternoon found that the polluted brook ran through 14 pastures, and out of 210 cows kept in them 170 cows drank from the waters. In one house bordering on this brook four cases of diphtheria were being treated in one family due to the milk of these germ-infected cows, and in another house

not very far away three cases of typhoid fever due to the same cause were discovered. While in the vicinity the inspectors put the matter of the polluted waters before the City Council of St. Albans, and asked what they were going to do about it. The City Council was at first doubtful as to the extent of the pollution of waters, but were taken on a trip to see the spot by the inspectors. A special meeting of the City Council of St. Albans was called, to which the inspectors were invited to submit their views of the situation. Then the City Council decided to appropriate \$70,000 to remedy the trouble. As the money was not on hand, a committee was appointed to devise ways and means of obtaining the money.

**Town Improves Sewer System**

West Palm Beach, Fla.—With the extension and improvement of the sewer system of West Palm Beach, the Council has in contemplation the installation of a septic system of purifying the sewage, a bond issue having recently been issued to make these improvements. At present the sewers empty into Lake Worth, but the sluggish current of the lake, washing back and forth with the tide, does not carry the sewage away as it should. W. H. DaCamara presented a carefully prepared paper at the last meeting of the Council, dealing with the subject and setting forth the advantages of the septic system of taking care of the sewerage. The Council will investigate the matter.

**Sanitary Bakery Ordinance Adopted**

Mobile, Ala.—A sanitary bakery ordinance has been adopted by the City Commission after a lengthy discussion of its provisions between the members of the Commission and a dozen bakers. The proposed ordinance calling for loaves of bread to be so stamped as to show their weight was strenuously objected to by the bakers through Gordon Smith, the owner of the largest bakery in Mobile, and the chosen spokesman of the bread makers. Mr. Smith said there was no way of guaranteeing the weight of a loaf as its weight decreases while being baked; also that a loaf is heavier on a damp day than it would be were the weather dry. After two hours of discussion, the Commission took the weight ordinance under advisement.

**WATER SUPPLY****Expect Formal Consent to Complete Reservoir**

Fayetteville, N. Y.—The trustees of Fayetteville expect to receive soon formal permission from the Conservation Commission at Albany to continue the construction of the new \$15,000 reservoir which was begun the latter part of May. Permission was given orally by the commission on July 2 and work was resumed at once. Almost immediately after construction was started in May the Conservation Commission served notice that, under a recent law, plans must be submitted to the commission and receive its approval before the work could be continued. Construction was stopped for a month, and on July 2 the commission met at Fayetteville to consider the plans for the reservoir. The commissioners ordered the specifications changed to include a cut-off wall of puddled clay in the middle of the surrounding embankments to prevent muskrats burrowing through and weakening them. The revised plans have been filed with the commission at Albany. The new reservoir will be completed probably by the first of October, according to Colonel M. B. Birdseye, who is inspecting the work.

**North Tonawanda Water Impure**

North Tonawanda, N. Y.—Health Officer Thomas Barnard has issued an edict to the residents of North Tonawanda directing that extra precautions be paid to the water supply of the various families of the city. He directs that all drinking water be boiled. He says there is much contagion in the water of the Niagara river at present owing to the weather conditions.

**State Engineer Approves Dam**

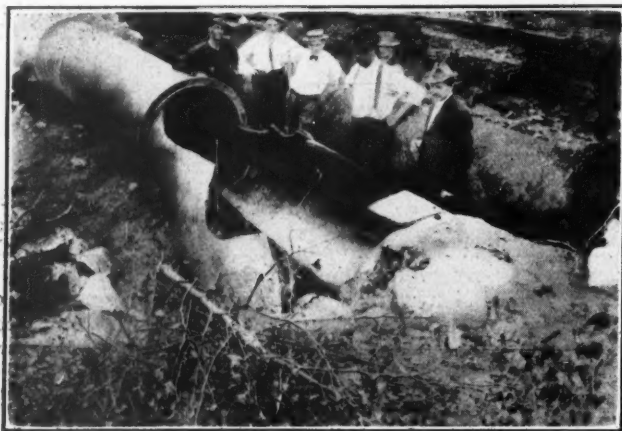
Batavia, N. Y.—Engineer McKim, of the State engineer's office, has approved the plans for a new dam in the Tonawanda creek in the rear of the municipal building, for which the village has already voted an appropriation of \$8,000. Work will be started on the dam at once. It will be of steel and concrete.

### Pipe Laid for Marblehead's New Water Supply

Marblehead, Mass.—The entire stretch of pipe connecting Thompson's meadow, the new source of Marblehead's water supply, with the pumping station on Loring avenue, has been laid and work is progressing at the present time in making preparations to begin the work of digging the wells in the meadows from which will be obtained a supply of water which will probably be enough to meet the demands of the town for years to come. A new roadway is being built into Thompson's meadow by means of which it will be possible for teams to enter and carry materials for the workmen to work with, and all indications at the present time are that the work will be completed some time in September. The wells, which will be located in Thompson's meadow, will be dug and not driven, as the latter method of sinking the wells frequently causes much difficulty with the pipes which carry the water to the supply pipe. The supply of water in well No. 2, which was dangerously low a year ago, is still ample, the water rising to a height of 14 feet. Last year the water did not attain a higher level than 10 feet during the summer, and at one time was pumped completely dry.

### Claims Dynamite Was Used on Water Main

Scranton, Pa.—The illustration shows the 36-inch water main near Woodland Reservoir which W. W. Scranton, head of the Scranton Gas and Water Company, charges was blown up by dynamiters. The broken section of water pipe has been replaced and water is once more flowing through the main. Between the time of the break and midnight millions of gallons of water tore down the hill north of the reservoir. The flood ripped out the roadbed as though it were of sawdust, bowling over stones two feet in diameter, warping gas mains and converting streets into miniature mud canyons. Mr. Scranton said that his watchman at No. 7 dam heard the report of the explosion and upon running down the line of the pipe found the break where the



Courtesy Scranton Tribune-Republican.

WATER MAIN SUPPOSED TO HAVE BEEN DYNAMITED

two 36-inch mains cross the Roaring Brook, a short distance above Nay Aug Park. Mr. Scranton has in his office a piece of fuse, of the kind ordinarily used to explode dynamite, which he picked up at the break in the main. He lays the blame for the dynamiting on the striking laborers, with whom his company has had trouble during the past week.

### Water Company Makes Reduction in Rates

Warren, Pa.—The installation of the large number of private water systems in Warren has had its effect upon the Warren Water Company, and in order to prevent if possible the installation of more such plants the company has announced a reduction of 20 per cent. on meter rates. For some time the borough of Warren has been endeavoring to purchase the water plant, which is a subsidiary of the American Water Works & Guaranty Company. Appraisal was made and the price fixed at \$410,000. A case to test the constitutionality of the Milliron act is now pending in the Supreme Court. It is through the merits of this act that it was hoped to purchase the system. The act provides municipalities may purchase water systems by bonding the plant for the purchase price. With the reduction in rates it is probable that the agitation to purchase the plant will be dropped.

### State Health Department Reports Water Infection

Corning, N. Y.—In its bulletins covering the month of June, just issued by the State Department of Health, that department deals at some length with the recent typhoid fever outbreak in Corning, when 60 cases of the disease were reported by Dr. Frank S. Swain, health officer of that place. The chief sanitary engineer of the State Health Department was dispatched to the scene immediately and made a thorough examination of the public well, the records of the public pumping station, had certain water levels taken in the well and of the back water of the lake with respect to the water supply. Inquiries of the milk supply were also made and other data were collected bearing upon the possible source of infection. The bulletin says that it became evident immediately that the cause of the outbreak of typhoid had been an infection of the water supply. "It has been shown during previous years," the bulletin cites, "from frequent analysis, that the water in the well becomes polluted at times and previous reports have been made upon the probable cause of this fluctuation in quality. It has been pointed out in other reports that the water supply was so contaminated at times as to be a serious menace to health; that it was impracticable to control any purifying process by hypochloride of lime through bacteriological analysis; and the danger of an infection, should hypochloride be used under conditions which would make it impracticable to determine the infection until it was too late, has been particularly pointed out." The bulletin then calls attention that these possible sources of danger seem to have operated in this particular instance, for on March 30 and on April 1 of the present year high water occurred in the river, which affected conditions at the well in such a manner as to affect the supply. It is further set forth in the bulletin that the gate at the dyke was left open, either through carelessness or accident, and the water backed into the lake below the pumping station and into the small overflowing stream from the well to an elevation which was approximately at the height of the overflow pipes from the well. While this back water was taking place, the records in the pumping station show that the water in the well also rose two or three feet, at least to the elevation of 1½ feet above the high-water mark from the said lake. Analysis of the water showed the most conclusive evidence of a very serious contamination and undoubted infection.

### Break in Water Mains Left City Dry

Bath, Me.—The city of Bath was without a drop of water because of breaks in the two mains crossing in the Kennebec and New Meadows rivers, and through which passes the city's entire water supply. The stand pipe was emptied within four hours. Some places of business were forced to close. Hose was stretched to the Kennebec river and attached to engines at principal points and other precautions were taken to prevent the spreading of any fire that might start.

### City to Show How Water Is Wasted

Philadelphia, Pa.—A municipal water waste exhibit, to demonstrate how useless waste of water may be eliminated, will be held in the City Hall courtyard next October. It will be the first of the kind ever held in the United States. All sorts of exhibits, showing how water may be saved, will be demonstrated.

### Ogdensburg in Danger of a Water Famine

Ogdensburg, N. J.—The town of Ogdensburg is facing a water famine and lack of rains to replenish the many cisterns that have gone dry makes the situation more tense. The large spring that supplies nearly half the town with drinking water and water for household purposes is very low and many cisterns were pumped dry long ago. While other towns in the neighborhood have been visited by showers very little rain has fallen in Ogdensburg.

### New Water Works Plant Is in Operation

Welland, Ont.—Welland has turned on the power in the new water works plant, which was built at a cost of \$75,000 and is a model of its kind. This plant is entirely apart from the old plant and both will be kept in commission. The new plant has a capacity of 3,500,000 gallons daily and the plant is arranged so that it can be increased to 10,000,000 gallons daily. The pump was built in England and is a direct pressure operated by water power.



### Greensboro to Have Pure Artesian Water

Greensboro, Ga.—Greensboro's first artesian well is now flowing about 50 gallons per minute of pure, cool water. The vein that is now furnishing this amount is about 271 feet from the surface. It requires about 100 gallons of water per minute to supply the city, therefore the City Council has arranged for the boring of another well. The question of boring the first well deeper was thoroughly discussed, but after mature consideration it was decided to dig an additional well. If fortune is so kind to the second well, Greensboro will have 100 gallons of pure water per minute. The present water supply was severely condemned by the State Board of Health last year, which brought about the determination to secure pure water for this city. The report of the Board was published in the press of the State and Greensboro received a "black eye," but when the new supply from the two artesian wells is turned into the city reservoirs, no city of the State can boast of better water. The supply of 50 gallons from the first well is now being used as far as it will go.

### Supply of Pure Water for Corning

Corning, N. Y.—The striking of an abundant supply of soft pure water admirably suited for domestic purposes at a depth of 100 feet below the surface of the Fuller farm, where the city is seeking a new water supply through a system of driven wells, has led the board of public works to determine not to abandon the present move for pure water and to lay plans for having the wells pumped by a huge air compressor into an impounding basin, from which it will be pumped by another set of pumps to the reservoirs located on the hills above the city. As water was not struck until far below a level at which vacuum pumps could be operated, it was at first planned to abandon the site upon which wells were being drilled for another site, but the report of the water experts led the board to change its plans. Specifications have been drawn for a large air compressor to pump the water from the fourteen wells which it is proposed to sink.

### New Water Wells Drilled

Newcastle, Ind.—Two new water wells have been drilled in by the city at the water works. They are big successes and each is producing four hundred gallons of water a minute.

## STREET LIGHTING AND POWER

### City Gas Mains Are Extended Many Miles

Schenectady, N. Y.—The Mohawk Gas Company has laid three and three-quarter miles of new gas mains since the first of the year. Practically all of this work has been done in response to demands for gas service in new streets and not laid simply to get ahead of new pavement as is usually the case. This is a far larger amount of mains laid in response to calls for service than in any previous year and about double that laid for similar reasons last year, though there was considerable more mains laid last year at this time in streets where they had to be put down to get ahead of new pavement.

### City Makes Agreement With Power Company

Los Angeles, Cal.—By a stipulation with the Southern Sierras Company and the Silver Lake Water Company, which are subsidiaries of the California-Nevada Water and Power Company, the city adjusts its legal status in a contest for Owens river water and power rights to a mere contest over the rights in the Owens river gorge in Mono county. For five years this litigation, involving a large appropriation of water south of the intake in the Owens river, a right of way through the region to be occupied by the Haiwee reservoir and across other aqueduct lands, and the power rights in the gorge, has been pending. In approving the stipulation the public service commission agrees to grant a right of way for the California-Nevada Company across the aqueduct lands for a power line from the Bishop creek power site of this company, which will ultimately serve the San Bernardino region. The company is developing about 20,000 horsepower electrical energy in Bishop canyon. In exchange for this right of way the company is to dismiss all litigation, except its claim of a power right in the Owens river gorge, and as to this the city will continue its contest with firm belief that it will win.

### City Has Nine Miles Ornamental Lights

Los Angeles, Cal.—With the completion of the contracts for installing ornamental lighting posts on Harvard boulevard and Third avenue, there will be nine and one-half miles of that type of lighting in Los Angeles, according to the statistics contained in the annual report of R. H. Manahan, city electrician. In addition, the report calls attention to the fact that proceedings on a number of streets for the installation of ornamental posts have been temporarily held up awaiting instructions from the council in connection with the proposed assessment plan for providing a distributing system for the aqueduct power and its use for this type of lighting. "An experimental installation of magnetite arc lamps adapted for ornamental lighting," reads the report, "is contemplated in the near future, and if satisfactory should result in a material saving on this type of lighting. During the past year 537 additional arc lamps have been installed, making a total of 3,693 lamps now in the Los Angeles district and provision has been made in the street lighting budget for the installation of 500 lamps beginning January 1, 1913. The total cost of street lighting during the past year, including ornamental post lighting, and all other street lighting, is as follows: Paid by the city, \$269,952.91; paid by property owners, \$46,739.44; total cost, \$316,692.35. The permits for the year 1911-1912 have covered the installation of nearly 300,000 16-candlepower lamps and 6,800 horsepower in motors, a material increase over last year's figures.

### Favors Abolishment of Electric Towers

Grand Rapids, Mich.—The collapsing of the Logan street electric lighting tower during a heavy wind storm that passed over the city early one morning of last week has made probable that the resolution introduced by Alderman Connelly providing for the passing of the historic lights will be approved by the committee on lights. Alderman Renihan is one of the venerable members of the council who believes that the towers have seen their best days. He said: "When the city was sparsely settled the towers were all right, but now, since the vacant lots have been built up to a large extent and the city's trees are replete with thick foliage, the tower has passed into being only an ornament," he said. "I live almost within range of one of these menaces and it always makes me a little nervous when I think of this particular tower swaying in the wind. A broken guy wire and only the hand of Providence can prevent many deaths. I believe that the city would be money ahead if the towers were torn down and the lights distributed where they are most needed." The tower at Logan street and James avenue was the third to fall. Fortunately in each instance no one was injured. The escape from death of the citizens living near these towers was miraculous. General Manager Cutcheon, of the board of public works, does not believe that the Logan street tower was struck by lightning during the cyclone. He said: "One of the high tension private electric light wires, strung near one of the guy wires holding this tower erect, was broken during the storm and the guy wire was burned through. With the parting of the guy wire the giant tower was a mere plaything in the wind and the crash was inevitable. The fact that the guy wires are all strung along the intersecting streets practically makes it impossible for one of the towers to fall on to the houses. In case they fall they always fall along the street. Of course, if any pedestrian happened to be walking on the street at the time he would surely meet his Maker." The Logan street tower will be converted into junk, as it was entirely ruined. A rigid inspection will be made of every tower and the slightest sign of any weakening of the guy wires or foundations will be repaired.

### Big Power Plant Planned

Springfield, Ill.—Extensive purchases of coal rights in Christian and adjoining counties are said to foreshadow the creation of the greatest electrical power enterprise yet undertaken in this country. According to the story told here the engineering dream of a gigantic power plant, operated with coal and located at the source of fuel supply, with transmission wires supplying power for a radius of 100 miles, is to be realized in the heart of Illinois. Francis J. Peabody, of Chicago, is back of some of the purchases of

coal right options in this vicinity, but his operations do not include all of the transfers which have been made and which are in contemplation. He has secured control of the coal mine and electric light plant at Edinburg, and is sinking two coal shafts at the new village of Kinkaid, where it is understood a big power plant is to be built and an industrial city located. Offers have been made for existing power plants in a number of other towns, including Taylorville, Nokomis, Pawnee, Girard and Auburn. In several villages which have municipal plants the authorities have been asked whether they would consider proposals for furnishing power, under the representation that such power will soon be available at less cost than is required to operate the plants now. From guarded representations of agents the impression has gone out that the Commonwealth-Edison Company of Chicago is behind the enterprise, though there is no evidence to this effect other than the fact that it is the one known corporation capable of financing so big a deal.

## FIRE AND POLICE

### Auto Apparatus Notes

Camden, N. J.—The fire department boasts of a flying squadron that is willing to take all comers in a speed and efficiency test. The department has just bought three Studebaker roadsters of the "Speedster Twenty" type, has had them equipped with chemical apparatus and goes at a mile-a-minute speed rate whenever traffic conditions permit.

New Castle, Pa.—Fire Chief Connery, while a guest one day last week of Fire Chief Vanderholt, Sharon, Pa., spoke very enthusiastically of the success of the automobile fire truck at New Castle. He declared three more have been ordered for that city, and that as fast as the proper time arrives additional machines will be ordered until all of the eight departments of that city are equipped and horses will be entirely done away with. "We have ploughed through mud nearly a foot deep in New Castle with our machine," said Chief Connery. "And I guarantee that an auto fire truck will go through any streets that can be traversed by the three-horse hitch Sharon has at present. There isn't a doubt of it and a high bond can be secured from the manufacturing companies that this will be done. We have a 60-horsepower machine at New Castle, and if Sharon secures a 90-horsepower machine it will be in even better condition for going through mud. The expense of upkeep is a big figure. We answer on the average of 22 calls a month and the machine costs us between \$5 and \$5.50 a month. This is about one-tenth of the cost of keeping horses, and besides the machine is much quicker in making runs."

Detroit, Mich.—With the addition of two Packard patrols to its equipment, the Detroit police department rounds a public safety squadron that ranks among the best in America. The rear wheels are being equipped with seven-inch pneumatic tires, marking another step in the evolution of a motor vehicle adapted to the continuous service of the police. The change from five and one-half to seven-inch rears was engineered by Commissioner Frank H. Croul, who has led the country in the modernizing of the police patrol system. The first set of seven-inch tires is in good condition after 5,000 miles. When the two new cars are delivered, there will be 11 Packards safeguarding the welfare of Detroit citizens, two in the fire department and nine in the police service. "If I had to take those cars at the end of the first year and thrown them into the river, we would still be saving money for the department," said Commissioner Croul. "As they are good for five years at least, the investment is distinctly worth while from a financial viewpoint. In the matter of efficiency, there is absolutely no comparison. One motor car with two men will cover as much territory as three-horse-drawn wagons with six men and give vastly better service. We have worked out a dove-tailed dispatching system by which the cars may be shifted rapidly as the need of the hour demands. The largest factor of saving is the reduction in the number of men. I shouldn't care to handle this department any longer if I had to give up the motor patrols. Every horse has been eliminated. Nearly all of the emergency ambulance calls in Detroit are handled by the motor patrols. The crews go through a course of instruction

under the direction of the police surgeon. The number of sick and injured carried in a year is approximately 3,000 persons. The department has compiled maintenance on seven Packard patrols in service from May 1, 1911, to May 1, 1912. The items are: Tires and tire repairs, \$3,760.74; miscellaneous repairs and painting, \$968.20; gasoline, \$1,487.58; lubricants, \$265.21. The total for the seven cars is \$6,481.73. The number of the calls responded to in the year was 32,939 and the mileage 81,599."

Lawrence, Mass.—After a meeting of the City Council the members of the board enjoyed a "joy ride" in the combination chemical and hose motor truck of the Webb Motor Fire Truck Co. S. Hardy Mitchell, who is agent for the company, called at the City Hall at the close of the meeting to demonstrate the machine. The truck is 88-horsepower and costs \$5,500. In order to show the power of the machine, Mr. Mitchell took the City Council up Broadway to Haverhill and up over Tower Hill. The members of the board afterwards expressed themselves extremely pleased with the fire truck.

Springfield, O.—A 40-horsepower, fully equipped Kelly motor fire truck has been placed in Engine House No. 2 by E. S. Kelly, for the use of the Springfield Fire Department in the actual work of fighting fires, without charge to the city. The purpose of the loan is to try out the machine to the fullest extent, as to its endurance and capacity. Chief S. F. Hunter, of the Fire Department, said he had not been informed by Mr. Kelly as to the length of time which the truck would be loaned to the department, but that the machine would prove a great assistance, as it means a saving on horse flesh. The fire truck is built to run 35 miles an hour, carries a 40-gallon chemical tank, and 1,500 feet of fire hose. In addition to this load, Chief Hunter said the machine was recommended as being able to carry all the men who could get on it. The truck has just come home from a tour of the country, during which demonstration runs were made in a number of cities. It created favorable comment.

Somerville, Mass.—Charles A. Burns, Mayor of Somerville, has sent a letter to the central fire station on Highland avenue thanking Captain Young, Lieutenant Conneeny, George W. Tripp and others in the department for an auto chemical which they built and which has just been put into service.

## GOVERNMENT AND FINANCE

### Cut Valuations on Franchises

Lockport, N. Y.—For the first time in many years Lockport is notified of a reduction in the assessed valuation of its special franchises. The State board of tax commissioners has filed with City Clerk Spalding a statement of the valuations as levied for this year, showing a total of \$625,050, as against \$657,800 last year, a reduction of \$32,750. The total fixed value of the properties assessed is \$834,200, according to the report. Lockport does not relish the reductions and will protest to the commission at the special hearing in Albany on July 24. The city authorities claim that the State board has not properly determined real values of some of the corporation properties here, and that the assessed valuation is therefore too low in some instances.

### Louisiana Cities May be Ruled by Commission

New Orleans, La.—The General Commission Government bill, considerably amended, has been passed unanimously by the State Senate and returned to the House for consideration of amendments. Monroe, Lake Charles, Baton Rouge and other cities were included by amendment with those cities authorized to refer commission form of government to municipality voters.

### Commission for Wildwood

Wildwood, N. J.—The city, by a majority of 218, voted in favor of the adoption of the commission form of government. The first ward gave 174 in favor and 31 against; the second, 90 for and 58 opposed, and the third, 82 for and 39 opposed. The people seemed to have made up their minds to try the new method of government and nothing the politicians could do or say moved them. It was the quietest election the resort ever held.



### Paris Elects New Municipal Council

Paris, France.—A new municipal council has been elected for Paris, and much is expected of its efforts in using the balance of the \$180,000,000 loan still at disposal. Out of this sum \$15,400,000 was earmarked for schools, \$25,000,000 for improved water supply, \$8,000,000 for slaughter houses, \$7,000,000 for hospitals, and \$6,000,000 for fighting tuberculosis and for the construction of cheap sanitary dwellings. A substantial sum was thus left for opening new streets and generally improving the aspect of Paris, the facilities for traffic and the development of its population. The needs of the metropolis may be divided under two principal heads—the creation of the Greater Paris and the clearing of the center.

## STREET CLEANING AND REFUSE DISPOSAL

### Garbage Plant a Success

Elmwood, Ind.—Committees from half a dozen towns and cities of the State have visited Elmwood during the past two weeks to inspect the new garbage plant recently erected and which is working in a perfectly satisfactory manner. By the collection and burying of night soil which is done each night, sufficient revenue is realized to make the operation of the plant self-supporting, and the sale of this as fertilizer will also yield the city several hundred dollars annually.

### Oil Scientifically Applied by Auto Truck

Willimantic, Conn.—The work of oiling the city streets, as a result of a vote of the Board of Aldermen recently, has commenced, and the oil is being applied by the power system. The oil is applied with a large automobile oiling truck instead of the former water sprinkling cart and the new device is a big improvement. The application of the oil by means of the auto sprinkler does not leave any pools and consequently the full benefit of the oil is obtained. The machine is one that has been used in the city of Bridgeport quite extensively. The street committee of the Board of Aldermen has contracted with the Standard Oil Company for the oiling of 7,000 square yards of street. People living on the streets where the oil is applied will find that the oil will not inconvenience them, as was the case in former years, as it is said that the oil is so evenly distributed upon a smooth surface, cleaned of dust, that it cannot be tracked. There will be no more dust and the streets will present a much cleaner and neater appearance. \$1,000 has been appropriated by the city for the purpose this year.

### Work of Oil Distributor Is Liked

Cortland, N. Y.—The county superintendent of highways is engaged in the work of oiling the roads between this city and Truxton and the Truxton-Chenango and the Truxton-Cuyler roads. The experiment of oiling the roads was first tried out in this county last year, and it proved to be such a success that it was decided all of the State roads should be treated in the same manner. The oil is being laid on the road with a specially designed sprinkler, which distributes oil and tar evenly over the surface. A fine layer of crushed stone is then put over the oil and rolled down. This makes the road practically dustless and saves the cost of resurfacing every two or three years.

### Spend \$12,000 for Laying Dust

Watertown, N. Y.—So far this summer property owners along the macadamized streets have spent nearly \$1,200 for oil and calcium chloride applications to the streets in front of their doors. City Engineer E. W. Sayles has figured that about \$600 has been paid so far for the oil and that about two carloads of chloride had been used, amounting to about \$300 a car. Property owners desiring the oil to lay the dust in front of their homes are paying four cents a running foot of their property, while the chloride costs two cents, but requires from two to three applications a season where but one is needed of the oil. While there are still some stretches that have received nothing in the way of a dust-laying remedy, the amount being used will serve to demonstrate the efficiency. It is thought that in next year's budget an appropriation will be made to meet the cost of oil and calcium so that the property owners will no longer be called upon to meet such expense.

### Boy Scouts Will Clean Streets

New York, N. Y.—Commencing the 29th of July, 1,500 Boy Scouts, with the co-operation of the Street Cleaning Department and the Department of Health, will undertake the work of clearing bits of paper, garbage and refuse from the streets of the east side and other congested neighborhoods of the city. The work was suggested by the Brooklyn Tenement House Committee, of which James Jenkins is the head, and was readily approved of by the New York Tenement House Committee, which promised to take a hand in the work. Commissioner Edwards was consulted and said that he would do his best to make it a success, through the assistance of the Street Cleaning Department. It is expected that the work will be repeated at intervals throughout the hot season, promoting good health in the sections which suffer most from the heat.

### Women "White Wings" Clean Streets

Dayton, O.—The illustration shows the women who volunteered to clean Quitman street and get the street in shape for the oil treatment given by the city as a means of laying the dust. Men, women and children on Quitman street, near Clover, armed themselves with shovels, hoes and brooms and cleaned the street. The thoroughfare was to be oiled in a day or two and residents of the street believed



Courtesy Dayton Daily News.

WOMEN "WHITE WINGS" OF DAYTON, O.

that a good job could not be done unless the surface was properly prepared by the removal of a liberal coat of mud. Everybody owning property in the neighborhood entered the work with a vim and it wasn't long before the amateur street cleaners had all of the excess dirt scraped off.

## MISCELLANEOUS

### City Enjoined from Giving Ice

Schenectady, N. Y.—Mayor George R. Lunn and several others of the Socialist city administration have had their fingers badly frozen in a financial way in their attempt to provide the poor of this city with free ice. Last winter the administration, acting upon the advice of the Welfare Board, purchased 30,000 tons of ice to be given away during the present summer. Then the local ice dealers produced a court injunction, which forbade the city from disposing of the ice in any way. This injunction has been made permanent by Justice Charles C. Vankirk at Saratoga. "The ice will have to melt," declared Mayor Lunn, "and the poor will have to suffer because the local ice dealers are greedy enough to snatch at the nickels of the poor. We are trying to do everything we can for the poor people of this city, and we hoped that we might make it more comfortable for the babies and the sick during the scorching days of summer, but alas it is not to be. Handicapped as we are in every way, opposed by every interest, we are, nevertheless, doing good work here in Schenectady. Now the ice we bought will melt and the city will lose the money invested, for we cannot even sell the ice to the local dealers. We may yet find ways and means to circumvent the ict trust here. It is planned now to organize a municipal ice company, which will take over the stock of ice, the courts permitting, and will sell it at cost to the poor, the money to be reimbursed to the city treasurer."

#### Borough Will Hold Silver Jubilee

Wilkesburg, Pa.—The borough of Wilkesburg will celebrate the twenty-fifth anniversary of its incorporation next October. Council passed a resolution in February providing for a silver jubilee and last week prominent citizens of the borough were named as chairmen of the various committees. The celebration will begin Thursday, October 3, with a homecoming of old-time residents. In the morning a civic, military and educational parade will be held, and in the evening a display of fireworks will be made. October 4 will be given over to athletic events, and in the evening a historical meeting and reunion will be held in the Penwood Club. The celebration will close with a banquet at the Penwood Club on the evening of October 5.

#### Standard Oil's Model City

Wood River, Ill.—After three years of planning, the Standard Oil Company, which owns the refinery at Wood River, is ready to realize its dream of a model city for employes. After the refinery was in operation the men who operate it began to settle near the works, and the village of Wood River was founded. But another settlement beat the Standard Oil village to the name, and it was necessary for it to be known as East Wood River until it absorbed the other town. Then a fine school building and model homes were erected. Next plans were made for electric lighting. S. A. Beach, village president, has announced that an agreement had been reached with the objectors, and that the assessment roll for sewers and a water system will be confirmed in a few days. The contracts will be let at once, and both systems will be in operation by Christmas. This ends a struggle of three years, which has been made by the Standard Oil Company to make its town habitable.

#### Lima Plans City Beautiful

Lima, O.—A project which in its realization will mean the expenditure of millions has been launched by the city council. The proposal means the complete beautification of the Ottawa river throughout its course within the city limits. The river bed is to be straightened and Lima's entire water front altered. Rock-lined bottoms will be blasted and the stream which hitherto has been an eyesore to the city, will be converted into a pretty inland park lined waterway.

#### Paris Adopts Eno System

Paris, France.—M. Lepine, prefect of police, adopted new regulations for street traffic drawn up for Paris by William Phelps Eno, who is here. Mr. Eno's system has been thoroughly studied and is urgently recommended by the three great syndical associations of Paris traffic and transport—the National Federation of Urban Transportation, the Syndical Chamber of Drivers and Chauffeurs of the Department of the Seine, and the Syndical Union of Cart and Truck Transportation. The three associations comprise over one hundred and fifty thousand active working members, and the fact that these cabmen, chauffeurs and truckmen have unanimously and enthusiastically demanded the immediate adoption of a system of traffic regulations created by a foreigner is unique in the history of Paris, besides being a remarkable testimonial to the efficacy of Mr. Eno's system. These three syndical associations also demand the appointment of a permanent city traffic commission in conformity with suggestions made by Mr. Eno, and M. Lepine, the prefect of police, promises that the demand will be carried out by the French authorities. M. Joltrin, head of the street traffic department, expresses the opinion that the Eno system, especially with its latest development of rotary application, solves the intricate and difficult traffic problem of Paris.

#### Georgia Town Is Erecting City Gates

Boston, Ga.—Boston is ambitious to be known as the Gate City and expects to lay claim to that title soon by erecting real gateways through which all may enter that flourishing Thomas County town. These gates will be in the form of large archways over all the roads just at the entrance to the town, and they will be of such a style and make as to attract special attention. They are expected to prove a great advertisement for the town also. They were ordered some weeks ago and are expected to arrive from the factory and be put in place at an early date.

#### More Beautiful City Aim of Parks' Head

Boston, Mass.—Three undertakings of importance are assumed by James B. Shea, Boston's new superintendent of parks, at the outset of his administration. They are resurfacing of roads, drives and boulevards in Boston's park system, beautifying of the city's playgrounds and buildings, and developing the zoological gardens. With entire confidence of the result, the new superintendent says he faces his administration determined to do everything he can to make Boston beautiful, attractive and practically enjoyable. How beautiful the playgrounds will be is indicated by work already done at the Prince street playstead in the North End. Petunias reaching over the sides of concrete boxes surmounting the pergolas that mark the entrance nod a welcome to wayfarers in Salem and Hanover streets. The Prince street recreation plot is the most beautiful in-town playground in Boston. It occupies the width of the narrow block between the Eliot school for boys and the Hancock school for girls. A municipal bathhouse juts into one corner, but its attractive lines produce only artistic effect. Last year trees were planted, the only ones in the North End except those on Copp's hill, and the pergola fence was erected. Evergreen trees recently have given way to petunias, geraniums, cannas and nasturtiums which not only top the pergolas but have been arranged in boxes high along one of the blank brick walls. At night the grounds are lighted and left open, affording a breathing place which is enjoyed by the entire neighborhood. Men, women and children congregate in this beauty spot. "I am merely continuing the work as laid out by John A. Pettigrew, the late superintendent and my superior for so many years," said Mr. Shea. "That in itself will be enough, and if I can but carry to completion the plans Mr. Pettigrew had mapped out for Boston's park system I will have succeeded. I know other problems await me. The roads and driveways in our parks were paved for far different conditions than those which obtain now. When our park boulevards and roads were made the automobile was just beginning to be popular. Now there are hundreds where a few years ago there was one. Treatment with the best possible bitumen macadam for the resurfacing of all of these roads is something that must be done as soon as the money can be provided. I have calculated that it will require all of \$500,000 to complete this work properly and for lasting and practical benefit. In the last few years I have given much of my spare attention to the problem of the playgrounds with which Boston is so well supplied. One thing has forced itself upon me and I mean to grapple with this problem and work out its solution. That is the beautifying and making attractive and more practical Boston's system of playgrounds. It cannot have failed to strike the attention of many that while our playgrounds are splendidly located and well arranged in the main, yet they are often bleak and uninviting. I intend so far as possible to fence these playgrounds attractively and substantially, to plant an abundance of shade trees, shrubs and flowers and in every practical way make these pleasure spots for the children beautiful as well as useful for recreation purposes. In the development of these plans, of course, I must be guided by the park commissioners and the amount of money available. That the field is broad and almost untouched in this line is apparent. The park commissioners and Superintendent Pettigrew have done work which will ever be a monument to them. Boston to-day has the finest park system of any city in the country. If I can merely keep up the work, maintain everything in this part of my work which has been accomplished, I believe I will have done well."

#### No More Free Lunch

Los Angeles, Calif.—Free lunches have been formally abolished from saloons in Los Angeles by the City Council, which took a final vote on this proposition, which has been before various Council committees for months. The law will take effect in 30 days. The step was taken with some hesitation by the city fathers because of no precedent existing that could be taken as a criterion, but as the demands for the abolishment of the "poor man's dinner," as it is termed by saloon men, were so insistent the Council decided to give the issue a test.



### Penal Farms Investigated

Duluth, Minn.—The County Board's special penal farm committee, consisting of Commissioners Joseph W. Cumming, Duluth; John Tischer, Duluth, and P. J. Ryan, Hibbing, accompanied by Charles E. Adams, special counsel of the County Board, have returned from Kansas City and Minneapolis, where they visited penal farms which are being maintained there. The commissioners were much impressed with their trip and gained many pointers which may be of assistance in formulating a penal farm institution for Duluth and St. Louis counties, as has been proposed. The committee will report to the July meeting of the board.

Mr. Adams, the board's attorney, was much impressed with the workings of the penal farm in Minneapolis and Kansas City. "It is the only thing for the wayward young man, the petty thief or the common drunk," he said.

"The correctional farm at Minneapolis," says Mr. Adams, "is seven years old and a model institution in every way. It is located on the north side and right at the end of the street car line. It comprises 108 acres, valued at \$500 per acre. The city has owned the land for 20 years, and the farm has done so much good that 48 additional acres will be added in the near future. Seventy acres are now under cultivation, potatoes being the principal crop, with plenty of garden truck. Not only the farm, but the city hospitals are furnished from these gardens. There is a large, modern brick factory on the grounds which gives employment to all of the 225 prisoners who are not employed in the garden work. The output of the brick yard is sold to the city as rapidly as it is turned out, as much of it is used in paving streets. The city tuberculosis hospital is located on the farm. It was built entirely by the prisoners and is kept in condition by them. I attribute the grand success of the Minneapolis farm to the efficiency of the superintendent, Frank M. Macdonald, who has been in charge for seven years. He is a man about 50 years of age and thoroughly understands his business. The discipline of the men under him is truly remarkable. They work just the same as if they were getting \$2.25 a day for their services. The Mayor at Atlanta, Ga., recently visited the Minneapolis farm, and he was so pleased with Superintendent Macdonald that he asked him to take charge of the farm at Atlanta, offering him more money than the Flour City is paying. Macdonald does not care for the South, and declined. The Kansas City farm, which was started about three years ago, comprises 116 acres, and the city has an option on 1,000 acres which adjoin the place. The institution is located about nine miles from the heart of the city and a little over a mile from the end of the street car line. It is a city undertaking and is controlled by the Board of Public Welfare. They have a beautiful tract of land which contains, among other things, a magnificent orchard and a large stone quarry. There is a rock crusher in operation on the place and the product is sent to the city for use in construction of streets and buildings. There are 200-odd prisoners on the farm, many of them being negroes and Mexicans and some ex-convicts. These men are now busily engaged in the construction of the main building of the farm, which will be entirely of concrete. It will be four stories in height and modern in every particular. All of the produce used in the institution is grown there."

At some later date the committee will make the trip to Montreal, where they will look over the city farm there.

### Wedding Fees Will Start Fresh Air Fund

Trenton, N. J.—Mayor Donnelly has agreed to turn over his marriage fees as a starter to a fresh air fund so that many of the poorer children of the city may be given an opportunity to enjoy an outing where fresh air, good food and pleasant conditions will be features. This new welfare work is to be started as a result of requests from the district nurse, the dispensary nurse and many physicians for some place to send children just recovering from illness and whose home surroundings are such that complete recovery is impossible. The mayor's generous offer has determined those interested to ask others to aid in this work. An appeal is made to residents of the country who are interested—Trentonians who have country homes on large farms or Mercer county farmers, who may be willing, for a nominal sum for food, to take one or more little ones and give them a chance for life.

### Freeport Plans Civic Improvements

Freeport, L. I.—Two important civic enterprises are being contemplated by the people of Freeport. One is the beautifying of the aqueduct, or Olive Boulevard, which runs through this village near the railroad track. The aqueduct is the widest road in the village and at the same time the only eyesore in the village. It is barren and like a bald spot surrounded by other streets and roads beautified by tall trees and lined with attractive homes. The other enterprise is the erection of a municipal building directly off the aqueduct at the junction of Grove street, Railroad avenue and the Island Boulevard, where it can be made the nucleus of a real civic center for the village. With the erection of the municipal building, or with the advancement of plans for it, the improving of the aqueduct is certain. Committees are being appointed to take over the consideration of the building project and in the near future committees will be appointed to make provisions for the laying out of the aqueduct. Both enterprises will take time and trouble, but the people of Freeport are determined in this latest civic move—and it will succeed.

### Two Towns Share Cost

Geneseo, N. Y.—Repairs costing \$17,000 are to be made upon the bridge spanning the Genesee river between the towns of Geneseo and York. These repairs became necessary by the destruction caused by the spring floods. The town boards of the two towns held a joint meeting at the river, and, after consultation with an engineer, decided that instead of rebuilding the bridge the desired result could be accomplished by erecting a new pier at the west end and replacing that portion of the apronway which was taken out by the undermining of the props at flood time. The estimated cost for Geneseo's share in the work was \$10,200, while York will pay \$6,800. The towns each held a special meeting for a vote on the matter by the taxpayers. In Geneseo 22 votes were cast, all but one of them being in favor of the proposition, and in York 13 votes were cast, 10 of which were in favor and three opposed. Each town will now issue bonds for the work and the contract will be let as soon as possible.

### Plan Municipal Telephones

Denver, Colo.—Confiscation of the City Telephone plant, condemnation of its real estate and operation by the city are proposed in an ordinance which has been introduced before the Board of Aldermen. The proposal to confiscate the plant is based upon the contention it has for years been operating without a franchise, and, so far as its poles and wires are concerned, is a trespasser on the city streets. The bill was referred to the Judiciary Committee.

### Women Will Plant Nut-Bearing Trees on Highway

Denison, Tex.—The Etude Club of Denison, composed of leading society and club women of the city, will go down in history as the first organization in Texas to take up the plan, originating at Sapulpa, Okla., with the Civic League of that city, for the planting of pecan and other nut-bearing trees in Texas along the right of way of the Canada-to-the-gulf highway, from Winnipeg, Canada, to Galveston, Tex., and to San Antonio, thence into Mexico, passing through North Dakota, South Dakota, Nebraska, Kansas, Oklahoma and Texas, on as straight a line as possible, and will rival in symmetry, length and beauty any public pike or highway in the world. It will follow closely the banks of the beautiful Red River of the North out of Winnipeg, coming south, and will have the distinction of crossing the Red River of the South at Denison. This magnificent boulevard will also follow along the Missouri River for a long stretch, where the landscape is unsurpassed, and will begin its way across Oklahoma at Caney, Kans. The completion of the Canada-to-the-Gulf highway will also call for more parks, lakes and playgrounds, bird and animal sanctuaries and other features for out-door life and amusement.

### Free Band Concerts in Chattanooga

Chattanooga, Tenn.—Chattanooga is now enjoying free municipal band concerts as the result of the raising of a fund of \$3,000 for the purpose by public subscriptions and a donation of \$1,500 from the city. The concerts will continue throughout the summer and will be held in regular rotation in the various parks and playgrounds of the city, thus giving all parts of the municipality an opportunity to hear the band practically at their own doors.

## LEGAL NEWS

### A Summary and Notes of Recent Decisions—Rulings of Interest to Municipalities

#### Invalid Sewer Assessment—Performance of Work

Jones et al. v. City of Salem.—Where the council of the city of Salem levied a sewer assessment without jurisdiction from the beginning, the property owners were not estopped from enjoining the collection of the assessment because the work had been partly performed before their suit was commenced.—Supreme Court of Oregon, 123 P. R., 1096.

#### Public Improvements—Acceptance of Performance

St. George Contracting Co. v. City of New York.—Where plaintiff contracted with an owner for excavation, and before he entered upon the premises or began performance, and while the premises were in the possession of the owner, a railroad company, excavating on its adjoining property, in no privity with the plaintiff, and not assuming to do the work in aid of plaintiff's performance, by mistake entered upon the property, excavated and carried away a part of the material, so as to prevent the contractor from doing that part of the work, the contractor's damage for the owner's breach of contract in permitting such removal was only the difference between the cost to him of doing the work and the contract price therefor.—Court of Appeals of New York, 98 N. E. R., 387.

#### Ordinances—Power to Repeal

Stemmler v. Borough of Madison.—As a general rule the power to pass an ordinance includes the power to repeal it. Section 23 of the Borough Act provides that "the council shall have power and authority by ordinance \* \* \* to lay out, open, etc., any street or avenue." An ordinance for the initiation of such an improvement having been passed by a borough council, a member thereof who had voted therefor demanded \$1,000 for land of his that would be taken, and it was ascertained that for the lands of other owners damages would have to be paid. Upon the coming in of the report of the commissioners of assessment the ordinance was repealed, no portion of the proposed street having been actually opened. Held, that at this stage of the proceeding council had power to repeal its said ordinance.—Court of Errors and Appeals of New Jersey, 83 A. R., 85.

#### Improvements—Sidewalks—Bermes

Village of Glencoe v. Utter et al.—Within the local improvement act requiring a public hearing on the question of a local improvement, provided that none need be had in a proceeding only for a sidewalk, an ordinance for a cement sidewalk with a subfoundation of cinders and bermes or embankment of earth 12 inches wide on each side of such foundation, and flush with the top thereof, where filling is necessary to bring the subfoundation to subgrade, provides for more than a sidewalk, the bermes being no part thereof. No benefits for the portion of a local improvement made, but not described in the ordinance for the improvement, can be assessed either to the public or to property; so that, an ordinance for a sidewalk not providing for the intersections at corners, there can be no assessment on account of such intersections actually laid.—97 N. E. R., 1052.

#### Rates—Regulation—Reasonableness

East St. Louis & Suburban Ry. Co. v. City of Belleville.—Complainant operated a railroad within the city of Belleville, charging five cents fare within the city limits, whereupon the city arbitrarily extended its limits along the line of complainant's road through a strip of territory leading to another town not fully built up, and then attempted to extend the five-cent fare from the old limits of the city through the annexed strip. The railroad company's property was valued at \$65,000. Its average yearly receipts under the regulation would be \$122,313.86, and operating expenses \$99,310.73, leaving a net return of \$23,003.13, which, after deducting 3 per cent. for depreciation, would leave for distribution among stockholders \$3,503.15. Held, that such regulation was invalid for unreasonableness.—U. S. District Court, 193 T. R., 95.

#### Ordinances—Partial Validity

Little v. City of Attalla.—Where a city ordinance is valid in part and invalid in part, he who assails its validity must show himself to be affected by the provisions alleged to be invalid.—Court of Appeals of Alabama, 58 S. R., 949.

#### Personal Injuries—Notice

Langguth v. Village of Glencoe.—Under Hurd's Rev. St. 1909, providing that any person about to bring action against a village for personal injury shall, within six months of the injury file in the offices of the village attorney and village clerks notices as to the injury, the notices must be filed before the action is commenced; and, being filed after commencement of the action by the filing of praecipe, and after the service of summons, though within six months of the accident, and before the filing of the declaration, will not support the action.—Supreme Court of Illinois, 97 N. E. R., 1052.

#### Contracts—Real Estate—Liability

Wood et al v. City of Montpelier.—The council of Montpelier voted to purchase land at a specified price, and the owner prepared a deed and delivered it to the mayor, who did not present it to the council; and the council never directed the drawing of a warrant for payment of the land, and the deed was never recorded. The council subsequently rescinded its vote regarding the purchase, and the deed was returned to the grantor. Held, that the city was not liable for the price, there having been no acceptance, and the tender not being equivalent to a delivery.—Supreme Court of Vermont.

#### Change of Grade of Street

Martin v. Baden Borough.—In an action against a borough to recover damages caused by a change of street grade, where evidence was improperly admitted showing that the work was done by a street railway company as agent of defendant borough, an instruction that the jury should consider this evidence for no other purpose than to show that the railroad did the work as agent of the borough, and that any liability would have to be borne by the borough, was insufficient to correct the error in the admission of the evidence, as leaving the jury to conjecture that there could be a recovery over by the borough against the railroad company.—Supreme Court of Pennsylvania, 82 A. R., 686.

#### Unauthorized and Illegal Contracts

Franklin Savings Bank v. Inhabitants of Framingham.—Prior to the enactment of St. 1910, relative to the issuance of notes by towns, which imposes certain duties on the town clerk, a town clerk, who, although he acted as "clerk to the selectmen," merely copied into the record book of the selectmen the minutes kept by one of the members, appointed by the board as its clerk as required by Rev. Laws, stated to a bank that a note which it afterwards purchased, purporting to be properly executed to bind the town, was correct in every particular. Held, that this did not estop the town from showing that the signatures of the selectmen thereto were forged; the town clerk having no duty whatever to perform with respect to the note, and not being the custodian of the records of the selectmen, and, if he had been, his statement not being a copy of those records, but a mere conclusion of law. Unauthorized statements by town officers, and those not made in the performance of some duty, do not bind the town and are not admissible in evidence against it. A town is not liable on a note made to the order of its treasurer and indorsed by him as treasurer; his authority to impose financial obligations on the town being strictly limited by statute, and he having no power by virtue of his office to make it a party to commercial paper. The word "corporation" in Rev. Laws, c. 73, providing that an instrument drawn or indorsed to a person as cashier or other fiscal officer of a corporation is deemed to be payable to the corporation and may be negotiated either by its indorsement or the indorsement of the officer, does not include cities and towns; and hence that section confers no authority on a town treasurer to make the town a party to negotiable paper by indorsement. The authority of a town treasurer cannot be extended beyond the limitations prescribed by statute, by custom or usage.—Supreme Judicial Court of Massachusetts, 98 N. E. R., 925.



## NEWS OF THE SOCIETIES

### League of Wisconsin Municipalities

The fourteenth annual convention was held at Wausau, July 23-24, with about 150 members and guests in attendance. The sessions were cut short one day owing to floods along the Wisconsin river, which inundated the city pumping and electric light station shutting down the street car service.

Declaring that the conditions in cities have changed so remarkably from what they were fifty years ago, that the functions and activities of city government must range over entirely new paths; former Mayor Burt Williams of Ashland responded to Mayor John Ringle's address of welcome to the delegates. He said that the public school system of the State has stood still the last half century, while other institutions have progressed. As a remedy he suggested that there be a reformation in the curriculum of studies, dropping the unimportant and adopting those fitted to the present day needs.

"The old paths and forms of municipal government have become antiquated and out of touch with the modern day conditions," he said. "To-day with the remarkable concentration of people in cities, the growth of great manufacturing centers, the development of alarming destitution in big industrial cities, where apparent wealth is abundant, the monopolization in the hands of a few of the necessities that every city resident must have, the growth of tenement districts, and the constantly changing industrial and social conditions, the conditions in cities have so remarkably changed that the functions and activities of city government must range over entirely new paths, must broaden into new fields, must break down charter enactments on every side if they are to make municipal government what modern day development compels it to be—an instrument to bring more happiness and comfort, better living conditions, inspiration and hope to the masses of the people of cities and a change for the better in social conditions in striking down the inequalities that exist between men and their opportunities and their accomplishments.

"I believe that the best municipal government to-day is that which shatters precedent and custom, and facing modern day conditions, boldly proceeds to act in every direction with the spirit of humanity as the guiding star in the endeavor to better living conditions of the majority of the people of such community.

"I believe that the ideal municipal government should act toward its citizens as would a father to his family, in every way as closely watching the welfare of every member, for to-day the bulk of the inhabitants of every city, large or small, is dependent on the will and greed of a few men for most of the actual daily comforts and needs, unless a city breaks away from the old beaten path of municipal government and acts as a judge or protector to administer justice in the name of humanity.

"A city government should have the right to govern industrial conditions so as to eliminate as far as possible poverty by the prevention of that which

in such a large measure causes crime, vice and vagrancy.

"This—the keeping in close touch with every family, not to extend humiliating charity when it is needed through some poor officer, but to know the living conditions beforehand and through a wide range of powers be able to prevent the necessity of administering charity when the pride and citizenship of the charity receiver is crushed."

The secretary in his report announced his intention of introducing a department in the Municipality Journal for answering questions of city officials relative to municipal affairs. The president in his address explained the two principal objects of the Municipal League—economy and a higher standard of municipal affairs. A discussion on oil sprinkling of streets brought out the general opinion that it was one-third cheaper than water.

Mayor Ringle also gave the address of welcome at both the municipal and State firemen's conventions. Former President William Brown, of Milwaukee, responded on behalf of the firemen. Former Mayor B. G. Edgarton, of Oconomowoc, gave the president's address, and Alderman Fred McGregor presented the secretary's report for the league. The firemen's business consisted of appointment of committees.

The league program in the evening, July 24, consisted of addresses by Fred G. Simmons of Milwaukee, W. G. Kirchoffer of Madison and E. E. Parker of Madison. The firemen's night program consisted of a memorial service. The chief address was given by City School Superintendent S. B. Tobey. A band concert on the courthouse square and a fire run by the fire department were features of the program. The city is decorated attractively for the event.

At Wednesday forenoon's session Neenah was selected for the next convention city. The officers for the ensuing year were elected as follows:

President—F. R. Crumpton, Superior.  
Vice-president—Joseph Fischer, Marinette.

Secretary—F. MacGregor, Madison.

Executive committee—B. G. Edgarton, Oconomowoc; A. J. Horlick, Racine; J. C. Schubert, Madison; Harry Bolens, Port Washington; Burt Williams, Ashland.

District vice-presidents—C. A. Leicht, New Lisbon; John Dengles, La Crosse; C. W. Starrett, Plymouth; J. W. Serlie, Eau Claire; J. T. Sheehan, Waupaca; Edward Luegger, Monroe; John Ringle, Wausau; H. C. Braeger, Rhinelander; John Holton, Stoughton; John Armbruster, Cedarburg; Fred G. Simmons, Milwaukee; A. J. Caldwell, Oconto.

"When Wausau compared the cost of her municipal management with Eau Claire's at the time she decided not to adopt the commission form of government," said A. E. James, statistician of the tax commission, Madison, at Wednesday afternoon's session, "I doubt if the facts obtained were reliable. We have no reliable municipal statistics in Wisconsin at the present time."

A resolution was passed authorizing agitation for cities to employ representatives as lobbyists at the legislature to

keep track of legislation affecting cities, opposing such as is unfavorable and working for such as is favorable. The resolution was signed by Mayor Fischer of Marinette.

The firemen's session was devoted to the discussion of technical questions, motor apparatus was held superior to horses in all respects.

### American Association for Highway Improvement

While there are to be many popular features of the American Road Congress, which is to be held on the Million Dollar Pier in Atlantic City, September 30 to October 5, highway engineers and others interested in the actual construction of public roads will be chiefly interested in the construction and maintenance section, of which Col. E. A. Stevens, State road commissioner of New Jersey, is chairman. Both President Taft and Governor Woodrow Wilson are to make addresses at the congress, and a number of ambassadors, army and navy men, governors of States and other officials will be among the speakers.

Invitations have been sent to all the State highway officials, county commissioners, mayors of cities, commissioners, county and State judges, and members of State legislatures to be present at the congress. It is being pointed out by the officials of the great Road Congress that a great deal of money can be saved to counties and municipalities by having their road and street officials attend the American Road Congress at the expense of the State, county or city. The officials can see and critically examine every known labor and money saving device and equipment in competition. They can see and critically examine every known road material in competition with all other known road materials; can study the government exhibits, obtain without cost practically a library of national, State and commercial publications which will be on exhibition, and can hear addresses and discussions by men connected with every branch of road work.

Every feature of street, park, road and bridge construction, maintenance and administration will be thoroughly dealt with by authorities in their respective fields. Prof. William H. Burr, dean of engineering of the Columbia University, will read a paper on highway bridges; George W. Tillson, consulting engineer to the borough of Brooklyn, will make an address on street paving; Gen. John C. Black, chairman of the United States Civil Service Commission, will devote his attention to the merit system in road administration. Associated with Col. Stevens in the arrangement of the program for the construction and maintenance section are Col. William D. Sohler, chairman, State highway commission of Massachusetts; John A. Benschel, State engineer of New York; Austin B. Fletcher, State highway engineer of California; P. St. J. Wilson, State highway commissioner of Virginia; W. S. Keller, State highway engineer of Alabama; Onward Bates, past president of the American Society of Civil Engineers; Dr. Edgar Marburg, dean of engineering of the University of Pennsylvania; John R. Rablin, chief engineer Metropolitan Park Commission of Boston; Major William V. Judson, U. S. A., engineer commissioner of the District of Columbia and others.

The construction and maintenance section is but one of more than a dozen sections of the congress. Among them will be sections devoted to finance, legislation, railways and their relation to public roads, and highway engineering in educational institutions. Men who are as prominent in their own field as those in charge of the construction and maintenance section are prominent in their particular field, are in charge of the other special sections of the congress.

## PERSONALS

BENNETT, MYRON E., Chief of the Sanford, Me., Fire Department, has resigned.

BENNETT, WILLIAM H., has been elected Chief of the Stony Brook, L. I., N. Y., Fire Department.

BARLOW, JAMES P., formerly Engineer of the Bureau of Municipal Research, has been appointed Principal Assistant City Engineer of Cincinnati, O.

BEATTY, P. A., Baltimore, Md., has been made Assistant Division Engineer, Gunpowder Division, Baltimore Water Supply. J. T. Todd succeeds Mr. Beatty as Resident Engineer at Loch Raven. Stuart Purcell has been appointed Assistant Engineer in the Filtration Division of which James W. Armstrong is Chief.

CATLIN, F. M., St. Paul, Minn., has been appointed Chief of Police.

DAVIS, CARLTON E., Department Engineer, New York Board of Water Supply, has been appointed Chief of the Water Bureau of Philadelphia to succeed Fred C. Dunlap, who will retire September 15. Mr. Davis is a graduate of the Massachusetts Institute of Technology, class of 1893. He has been engaged in water works construction in New England cities; also in Newark, N. J., and in Panama. He has been Division Engineer in charge of the construction of the Ashokan Dam since 1905.

DAVIS, W. R., Albany, N. Y., has resigned as Chief Bridge Designer and Inspector, office of State Engineer of New York, and will engage in private practise.

EBERLY, DR. CARL C., Ann Arbor, Mich., has been appointed City Sanitarian of Indianapolis, Ind.

JUSTIN, J. B., Harrisburg, Pa., has been appointed Assistant Engineer to the Board of Public Works, Philadelphia, Pa.

MARVIN, W. H., CHARLES DIX and R. E. BIE have been appointed Water Commissioners of Forestville, N. Y.

OHME, C. H., City Engineer of Tuscaloosa, Ala., has resigned.

SHERREED, MORRIS R., City Engineer, Newark, N. J., was married July 9 to Eleanor Vanderbilt, daughter of William Norris, of Red Bank, N. J.

THOMPSON, E. A., Baltimore, Md., has been appointed city smoke inspector. Mr. Thompson will visit Chicago to learn the steps taken by the western authorities for the abatement of the smoke nuisance.

UEBELACKER, CHARLES F., CHARLES N. BLACK and WILLIAM VON PHUL, all of New York City, have been admitted to the firm of Ford, Bacon & Davis, 115 Broadway, New York.

VAN SCOYOC, HARRY S., assistant in the City Engineer's Office, Altoona, Pa., has resigned to enter the employ of the Canadian Cement Co., Montreal.

WILLIS, HARRY P., Waterford, N. Y., has tendered his resignation as Chief Engineer of the State Highway Commission.

The following mayors have been elected:

NEW JERSEY.  
Atlantic City—Wm. Riddle.

ALABAMA.

Anniston—J. L. Wilke.

GEORGIA.

Fayetteville—G. R. Gay.

## Calendar of Meetings

August 26-27.

International Conference on People's Baths and School Baths.—Conference Scheveningen (The Hague).—A. M. Douwes Dekker, General Secretary, The Hague.

August 26-30.

International Association of Municipal Electricians.—Seventeenth Annual Convention, Peoria, Ill.—Clarence R. George, Secretary, Houston, Tex.

August 27-29.

League of Third Class Cities of Pennsylvania.—Annual Convention, Wilkes-Barre, Pa.



NEW MOTOR PRESSURE STREET SPRINKLER.

August 27-29.

Union of Canadian Municipalities.—Annual Meeting, Windsor, Canada.—W. D. Lighthall, Secretary-Treasurer, 305 Quebec Bank Building, Montreal, Quebec, Canada.

August 28-30.

Fourth International School Hygiene Congress.—Meeting, Buffalo, N. Y.—Dr. Thomas Storey, Secretary, Convent avenue and 139th street, New York, N. Y.

August 28-30.

Virginia State Firemen's Association.—Twenty-sixth Annual Convention and Tournament, Roanoke, Va.—L. E. Lookabill, Vice-President, Roanoke.

September 6-13.

Congress on Applied Chemistry.—Meeting, Washington, D. C.—Bernard C. Hesse, M.D., Secretary, 25 Broad street, New York, N. Y.

September 9-13.

Pacific Coast Fire Chiefs' Association.—Annual Convention at Los Angeles, Cal.

September 17-20.

International Association of Fire Engineers.—Annual Convention, Denver, Col.—James McFall, Secretary, Roanoke, Va.

September 18-19.

New England Water Works Association.—Thirty-first Annual Convention, Washington, D. C.—Willard Kent, Secretary.—Headquarters, Boston, Mass.

September 18-20.

American Public Health Association.—Washington, D. C.—Seldcar M. Gunn, Secretary, 289 Fourth avenue, New York, N. Y.

September 23-28.

Fifteenth Congress on Hygiene and Demography.—Meeting, Washington, D. C.—Dr. John S. Fulton, Secretary, Army Medical Museum, Washington, D. C.

September 24-28.

Chambers of Commerce and Industrial and Commercial Associations.—Fifth International Congress, Boston, Mass.

September 24-26.

Central States Water Works Association.—Sixteenth Annual Convention, Detroit, Mich.—R. P. Bricker, Secretary, Shelby, O.

September 30-October 5.

American Road Congress.—First Annual Meeting, Atlantic City, N. J. Logan Waller Page, President, Washington, D. C.

## MUNICIPAL APPLIANCES

### Motor Pressure Sprinkler

The International Motor Company, which claims to be the largest exclusive motor truck manufacturer, has begun the development of municipal apparatus which offers some very practical and exclusive points of design. This company has recently sold to the city of St. Louis a motor street sprinkler of unique design, which is said to be the most highly developed type of "water wagon" so far put out in this country. This St. Louis "water wagon" is built on a 6½-ton Standard Saurer chassis. The water tank has a capacity of 1,400 gallons. As will be observed, it has double riveted longitudinal and

transverse seams. The water tank is fitted with three baffle plates and four bilge angles so placed as to prevent any circular motion of water. The pump equipment consists of a Gould fire pump with a capacity of 400 gallons per minute against a pressure of 30 pounds on the pump circuit, and ten to twelve pounds at the nozzle. The pump is geared at 400 r. p. m. for a truck speed of six miles per hour, which gives a water distribution of one gallon per 45 square feet.

Control of the sprinkler is effected by two levers. Lever No. 1 throws in and out of gear a jaw clutch operating the pump from a driving sprocket secured to a differential housing. Lever No. 2 operates on an interlocking quadrant, independently and together, the gate valves governing the two nozzles. The nozzles are easily adjusted to the full limit of useful nozzle pressure, in addition to an adjustment by a single ring nut which permits the throw of the water from the nozzles to be regulated for varying widths of streets. When the two gate valves leading to the nozzles are closed pressure is obtained by an adjustable by-pass valve on a closed pump circuit. This pressure can be varied from 0 to 50 pounds pressure per square inch. The tank is equipped with 10 feet of hose, fitted with a standard hydrant connection at its end. This hose is connected to an automatic spring pressure check valve which permits the filling of the tank and, when full, automatically closes, thus necessitating no further attention from the operator other than that of disconnecting the hose from the hydrant. A ball float is fitted to the top of the tank, in addition to a small man-hole which permits the operator to judge the height of water in tank.



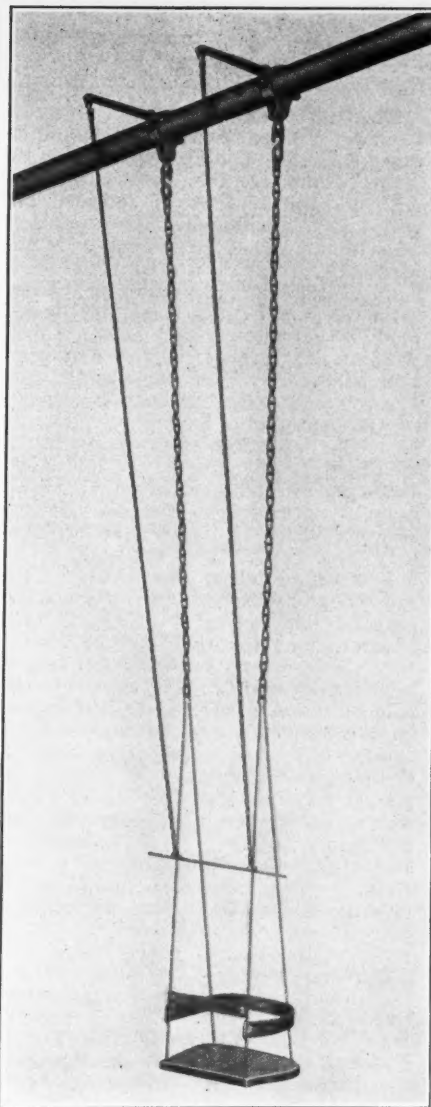
### Playground Swings

A. G. Spalding & Bros., of Chicopee, Mass., manufacture a great variety of all-steel apparatus for playgrounds. One of the most important features of their swings is the ball-bearing drop-forged hangers and drop-forged links in place of a rope. The ball-bearing of the hanger is shown in the phantom drawing herewith.

One of their latest products is a so-called self-swing. The seat is of the box-chair pattern, a strong webbing encircling the body of the child, which is securely anchored to the wire suspension by metal clips and provides a sliding front strap for easy entrance and exit. The hangings are galvanized metal. The connections are ball-bearings, similar to that just described. Arms extending horizontally from the head piece support two chains which carry at their bottom a bar, which is grasped by the hands of the child seated in the swing. The pulling of this bar by the child puts the swing in motion, and the exercise of the arms thus obtained strengthens and develops their muscles without straining, and at the same time enables the child to swing without an assistant.

### Oxy-Acetylene Welding and Cutting Apparatus

The Alexander Milburn Company, of Baltimore, Md., are manufacturers of apparatus for utilizing the heat value of acetylene gas to secure a concentrated and readily controlled flame of intense heat for welding metals, cutting steel and iron (cast iron excepted). The heat value of acetylene gas is 1,846 British thermal units per cubic foot. When mixed with oxygen in the blow-pipe flame, a temperature of 6,300 degrees F. is obtained, considerably over twice the melting points of iron and steel. By its use it is possible to fuse such metal together locally at just the point desired without loss of heat running back into the part by radiation, and thus the weld is accomplished rapidly and economically. The torch also serves for building up worn parts or short ends. By it iron and steel can be severed up to a thickness of 4 or 5 inches or even greater. To start the cut it is necessary to bring a tiny spot up to a red heat by the use



CHILD'S SELF-SWING.

of the heating flame, when a jet of oxygen is directed to strike this heated iron and carries it away in a fine stream of iron oxide, making a smooth, narrow

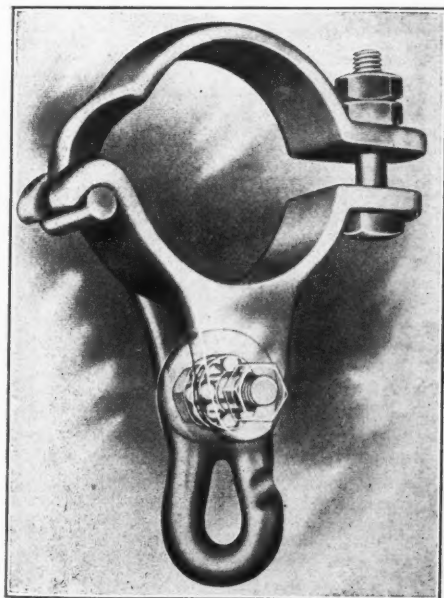
cut and not affecting the surrounding metal.

The plant shown in the illustration is a generating welding and cutting plant, consisting of a generator of 50 pound carbide capacity, a welding and cutting torch with 14 tips, complete for all standard ranges of welding and cutting, and 400 cubic feet of oxygen shipped in four separate cylinders. Additional oxygen can be obtained in loaned cylinders of 100 cubic feet capacity, from companies which make a specialty of this. There is also included an oxygen regulating valve with gauges, an acetylene regulator, 50 feet of welding hose, two pairs of welding goggles and welding supplies, including 20 pounds each of Norway iron and cast iron welding rods, two pounds of cast iron flux and all incidental supplies.

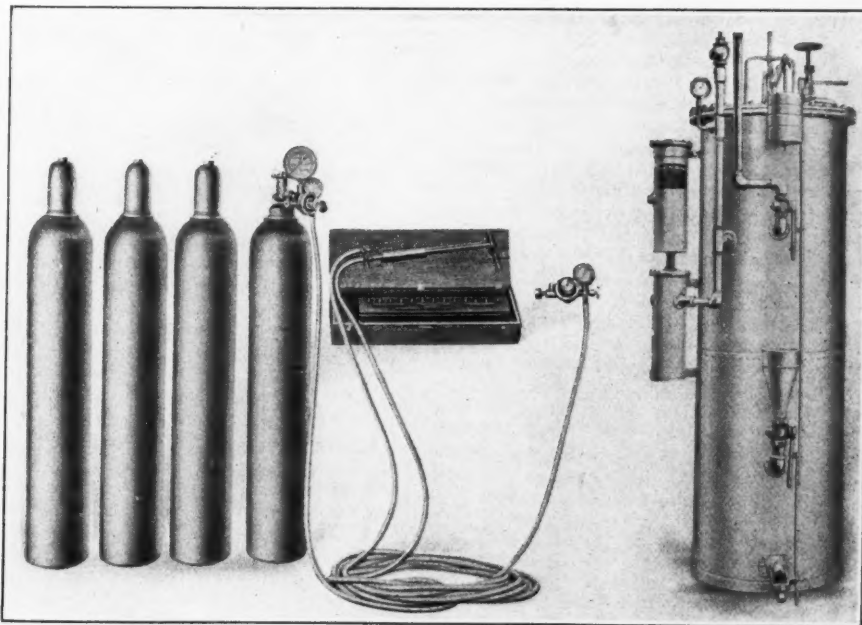
### New Rock Drill

A St. Louis company is putting on the market a gasoline rock drill, invented by Lewis L. Scott, of 5043 Von Versen avenue. The gasoline rock drill is protected by patents in the United States and foreign countries. Scott says he spent six years in bringing the machine to its present state of efficiency. A company is being formed to manufacture the machine in St. Louis. In describing his machine, Scott said:

"The piston of the machine is operated direct by gasoline explosion and strikes the drill steel under full pressure 1,000 times a minute, and is absolutely free from the crank shaft and all the connected parts when the blow is actually struck. Rock cannot be bored as can wood or metal; it must be chipped away by a series of rapid and powerful blows, and the drilling bit must be automatically rotated slightly, after each blow is struck. If the ordinary gasoline engine should let its piston strike solid against the steel drill bit it would smash to pieces in two blows. The piston of this gasoline drill is made of vanadium steel, and is absolutely free from the crank, and all connected parts when the blow is actually struck, so there is no shock to the machine's bearings other than those common to any gasoline engine."



BALL-BEARING HANGER OF SPALDING SWING.



MILBURN OXY-ACETYLENE CUTTING AND WELDING APPARATUS.

## INDUSTRIAL NEWS

**Cast Iron Pipe.**—Chicago—Several good contracts have been closed. Quotations: 4-inch, \$27.50; 6 to 12-inch, \$26; 16 inch and up, \$25. Birmingham—All water pipe plants are operating on full time and are shipping pipe as fast as made. The outlook is for steady operation for several months. Quotations: 4-inch, \$24; 6 to 8-inch, \$22; 10-inch and over, \$21.50. New York—Manufacturers report a great run on pipe of all sizes. The demand seems far from satisfied. While no public buying of consequence is reported the demand from private consumers is steadily putting the foundry order books in better condition. Quotations: 6-inch, car loads, \$22 to \$23.

**Lead.**—Lead is unchanged, the market continuing dull and tending toward weakness. There are said to be considerable quantities of old lead in the vicinity of New York, which tends to keep the local market weak. Quotations: New York, 4.70c.; St. Louis, 4.60c.

**Asphaltic Concrete Plant.**—Dayton Hedges, Patchogue, L. I., has purchased a second portable drying and mixing outfit for road work from the Ruggles-Coles Engineering Company, 50 Church street, New York.

**Dryer for Sludge.**—Norwich, England, is using a class A-14 Ruggles-Coles dryer for treating sewage sludge.

**Engineering Firm.**—Ford, Bacon & Davis, consulting engineers, 115 Broadway, N. Y., announce that Charles F. Uebelacker, Charles N. Black and William von Phul have been admitted to partnership. The firm was established in 1894 and has been engaged in designing, constructing and operating public utilities and engineering enterprises generally, including urban and interurban electric railroads, elevated railroads and subways, electric power and lighting systems, hydro-electric and steam power plants, artificial and natural gas developments, water storage, irrigation and reclamation projects. The principal branch offices of the firm at 921 Canal street, New Orleans, and 85 Second street, San Francisco, will each be in charge of a resident partner.

**Town Planning School.**—Under the auspices of the University of London Extension Board a summer school for the teaching of town planning is to be held at the Hampstead Garden suburb from August 3 to 17. It has been arranged in view of the rapid progress of the town-planning movement and the coming into force of the town-planning act. The Hampstead Garden suburb has been chosen as the center (says the prospectus) because it affords a good opportunity for studying the results of town-planning methods. The lectures will be given at the institute of the suburb. Courses of lectures will be given by experts on town planning from the practical, legal, engineering, surveying and public health aspects, and on its developments in foreign countries. There will be special lectures on suburb planning, garden city estates, the financial aspects of town planning and modern town planning in Germany and America. The fee for the lectures and demonstrations (excluding excursions) is \$7.66. Those who attend regularly will be given a certificate.

**Electric Conduits.**—The Western Conduit Company of Ohio, a subsidiary of the Youngstown Sheet & Tube Company, has been organized with a capital stock of \$250,000 and will take over the property and business of the Western Conduit & Manufacturing Company, manufacturer of rigid and flexible conduits for electrical work, made from steel pipe, enameled or galvanized, and also armorite conduits, at Harvey, Ill. A new plant will be built at Youngstown, O., on a 10-acre tract adjacent to the property of the Automatic Sprinkler Company. It is the intention of the company to eventually concentrate all its manufacturing at Youngstown. L. J. Campbell is president; Richard Garlick, vice-president; George F. Holly, secretary, and C. C. Rose, treasurer.

**Sewerage Patent Suit.**—The Cameron Septic Tank Company has commenced suit against the city of Winchester, Ky., for the infringement of the Cameron patent No. 634,423, in connection with the recent construction of a sewage disposal plant following a recent Imhoff patent and designed for the city of Winchester by Chas. E. Collins of Philadelphia. The Cameron people maintain that the Imhoff design of apparatus merely indicates Dr. Imhoff's ideas of how, in his opinion, the septic process, covered by the process claims of the Cameron patent, can be best applied in developing an intensive growth of anaerobic bacteria for the purification of sewage.

**Barrett Roofs.**—The Barrett Manufacturing Co. has published an attractive pamphlet under the caption "A Mile of Barrett Specification Roofs." The reference is to the warehouses of the Bush Terminal, Brooklyn, N. Y. These buildings, 181 in number, covering more than 70 acres, are all covered with Barrett specification roofs. A three-page illustrated folder gives a view of the whole terminal, which is claimed to be the most complete and scientific harbor and railroad warehouse development in the world. Municipal officials and engineers of cities contemplating harbor improvements would do well to secure a copy of this pamphlet for the sake of the illustrations alone.

**Pumping Engines.**—The Luitwieler Pumping Engine Company, 125 Ames street, Rochester, N. Y., is having plans prepared for an additional factory.

**Municipal Machinery Market.**—Municipal business this summer in the vicinity of Detroit, Mich., has been somewhat disappointing; there have been few installations of water works or electric lighting plants and additions and replacements in plants of this nature have mostly been of a minor character. On the other hand, considerable roadmaking equipment has been purchased and sewer contracts have been of large volume.

**Motor Cycles.**—The Hendee Manufacturing Company, Springfield, Mass., will erect immediately a factory building on State street, to be 40 x 300 feet and five stories. The purpose is to increase manufacturing facilities by the addition of new equipment and the employment of some 400 additional men, bringing the total of employes to 1,600 and raising the annual output of motor-cycles from 19,000 to 35,000.

**Steam Power Appliances.**—The consolidation is announced of the Griscom-Spencer Company, 90 West street, New York, and the Russell Engine Company, Massillon, O., under the name of the Griscom-Russell Company, with a capital stock of \$2,000,000. The plant of the Griscom-Spencer Company at Jersey City makes feedwater heaters, evaporators, condensers and other steam power appliances and the Massillon plant makes steam engines. The Jersey City plant will be removed to Massillon. C. A. Griscom, Jr., of New York, will be president of the new company, and Arvine Wales, Massillon, vice-president. G. M. Russell will be one of the directors.

**Webb Motor Fire Apparatus.**—The Webb Motor Fire Apparatus Company, whose factory is now located in St. Louis, Mo., has sold a large amount of its capital stock to a few eastern capitalists headed by John M. Mack. Mr. Mack has recently severed his connection with the International Motor Company, of which he has been vice-president, and will take an active interest in the affairs of the Webb Motor Fire Apparatus Company from this date. Early in September the company will move its factory from St. Louis to Allentown, Pa., where it has secured a magnificent \$250,000 plant fully equipped with modern machinery, and where it will turn out during 1913 two hundred and fifty pieces of fire fighting apparatus. The Webb Motor Fire Apparatus Company has been reorganized and the following new officers are now taking an active interest: A. C. Webb, president; Geo. E. Blakeslee, vice-president; John M. Mack, treasurer; W. J. W. Groves, secretary. The general sales offices have been established in New York City on the eighth floor of the U. S. Rubber building, corner Broadway and 58th street, and will be in charge of the writer as sales manager. Branches and agencies have been established in the following cities: New York City; Boston, Mass.; Cleveland, O.; Atlanta, Ga.; Chicago, Ill.; Dallas, Tex.; Kansas City, Mo.; San Francisco, Cal.; Spokane, Wash.; Winnipeg, Canada; Vancouver, B. C.; Halifax, N. S.; Neodesha, Kan., and Philadelphia, Pa., and a large sales force put into the field. All new orders now received are being put to work in the Allentown plant, and for the present both the plant at Allentown and St. Louis will be worked to its full capacity. The name of the company has recently been changed to the Webb Company, and from now on will be known as such.

## NEW CORPORATIONS

The Lake Village Light and Power Company, Little Rock, Ark., capital, \$7,000. Incorporators: R. B. Cloffet, president, and John G. B. Sims, secretary.

Merritt Street Sweeping Machine Company, manufacturing street sweeping machinery, etc. Capital, \$50,000. Incorporators: F. B. Knowlton, E. J. Farhan, John McLaren, all of No. 164 Nassau street, New York City.

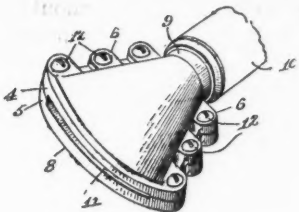
Elmira Sand & Gravel Co., Elmira, N. Y., deal in sand, gravel, etc.; capital, \$10,000. Incorporators: John M. Carpenter, Wm. P. Wynne and John Wynne, all of Elmira, N. Y.



## PATENT CLAIMS

**1,033,195. FLUSHING NOZZLE.** Hanson Robinson, South Bend, Ind. Serial No. 651,906.

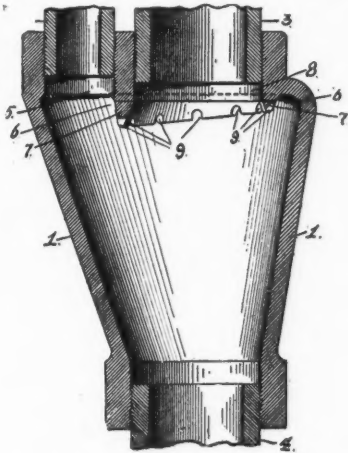
A flushing nozzle formed in sections, each of which comprises a rounded and inclined wall having diverging sides and terminating at its forward end in a thickened flange which is provided with a recess on one of its faces, said recess increasing in depth from one side to the other, and side flanges provided with



apertures, whereby said sections can be secured together to form a tapering chamber merging into a flat wide mouth of increasing depth from one side to the other.

**1,033,278. AIR LIFT.** John P. Simmons, San Francisco, Cal. Serial No. 632,533.

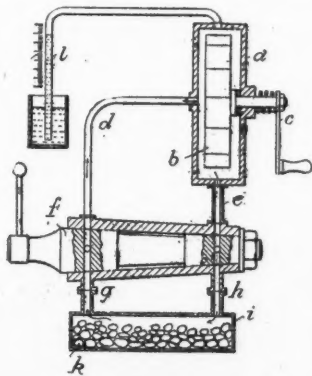
In an air lift, a flow pipe having formed about its lower end an encircling chamber, said lower end projecting into said chamber and having its lower edge sloped upwardly from one side to the other whereby the chamber is deeper at one side, and



said end being provided with an annular series of openings; and an air pipe, the inlet of which communicates with said encircling chamber at its deeper side.

**1,033,626. APPARATUS FOR TESTING GAS.** Hans Wilhelm Christian Schroeder, Johann Heinrich Draeger and Alexander Bernhard Draeger, Luebeck, Germany, assignors to the firm of Draegerwerk, Heinr. & Bernh. Draeger, Luebeck, Germany. Serial No. 658,601.

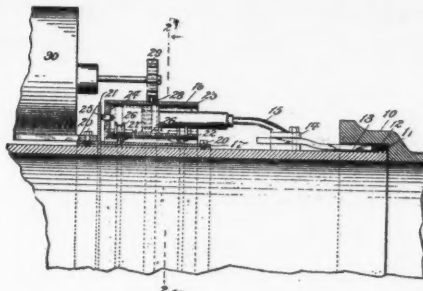
A gas testing apparatus comprising a casing, a rotatable fan therein, a chamber for an absorption material, two pipes



connecting the chamber with the fan casing in such manner as to permit a circulation of gas through the casing and chamber, and a cock in said pipes.

**1,033,279. MACHINE FOR CALKING PIPE JOINTS.** Colln C. Simpson, Jr., Flushing, N. Y. Serial No. 626,118.

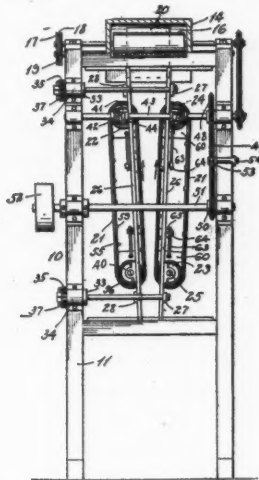
A device of the class described comprising in combination a foundation band, an abutment on said band, means for securing said band on a pipe, a traveling



receiver adapted to move over said band and bear on said abutment, and a power hammer on said receiver, substantially as described.

**1,033,291. GRADING MACHINE.** Gustav Thomas, Los Angeles, Cal. Serial No. 658,677.

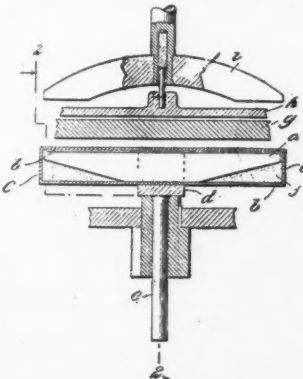
A grading machine comprising an inclined frame, co-operating aprons mounted in said inclined frame opposite to each other, rollers movably carrying the said aprons, adjustable frames for supporting the said rollers, means for simultaneously spacing the said frames with respect to each other at their upper and lower edges whereby they may be brought closer together at the bottom than at the



top for accomplishing the grading operation, means for securing the upper edges of the aprons with respect to the upper ends of the supporting rolls thereof, whereby any tendency of the aprons to slip downwardly upon the rolls will be prevented, and means for directing the assorted materials from the aprons into different receptacles.

**1,033,610. WATER METER.** Lewis Hall-lock Nash, South Norwalk, Conn. Serial No. 536,526.

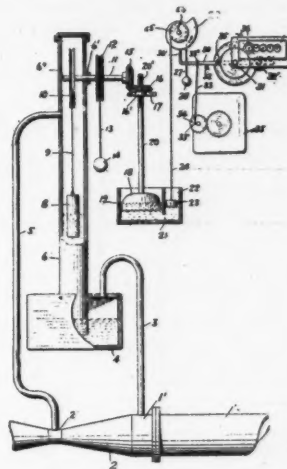
In a water meter in combination with driving mechanism including a magnet,



of an inclosing shield for the magnet made of impervious material completely inclosing the magnet and separate therefrom, and a filling within the shield in which the magnet is embedded.

**1,033,598. LIQUID METER.** John W. Le-doux, Swarthmore, Pa. Serial No. 532,180.

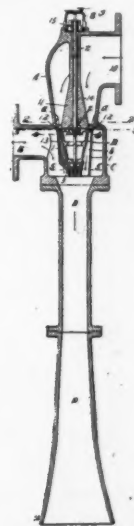
In a liquid meter, in combination with a liquid conduit, a liquid chamber, means whereby differential pressures are communicated from said conduit to said chamber, and the liquid height in said chamber is varied, a device in said chamber movable by changes in said liquid height, a pair of communicating liquid chambers, a device movable in each of said communicating chambers, means whereby said first device moves a device in one of



said communicating chambers to change the height of liquid and the device in the second communicating chamber, integrating mechanism, and means whereby said last named device controls the operation of said integrating mechanism, one of said devices being tapered so that the elevation of said last named device shall be a simple proportion of the rate of flow in said conduit.

**1,031,143. HYDRAULIC AIR COMPRESSOR OR PUMP.** Otto H. Mueller, Camberwell, England, assignor to Henry R. Worthington, a Corporation of New Jersey. Serial No. 512,776.

The combination with a liquid supply and an annular jet inlet, of a wheel provided with a plurality of passages rotating in line with the jet inlet and extending through the wheel longitudinally of the wheel axis whereby the annular jet



is divided into a plurality of rotating jets, a nozzle in line with the wheel passages in which the wheel jets are combined, and an air inlet for admitting air to the inlet end of the nozzle.

**1,031,377. MEANS FOR PROTECTING METALLIC SURFACES FROM CORROSION.** Gilbert Rigg, Palmerton, Pa., assignor to New Jersey Zinc Co., New York, N. Y., a Corporation of New Jersey. Serial No. 509,995.

Means for preventing corrosion of metallic surfaces, comprising a rust preventing coating of paint containing as one of its ingredients a tungstate capable of yielding to water sufficient of its tungstic acid in the combined state to give protection against rust, substantially as described.

## THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Concrete Work—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards.

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

## BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK.	ADDRESS INQUIRIES TO
<b>STREET IMPROVEMENTS</b>				
Mississippi	Hernando	Aug. 5	Grading roads; cost, \$100,000	Edw. Iverson, County Clk.
Kansas	Kansas City	Aug. 5	Constrn. macadam pavement	F. M. Holcomb, County Clerk.
Alabama	Mobile	Aug. 5	Constrn. 18,900 yards wood block, 16,000 yards asphalt, 12,700 yards vitrified brick	Commissioners.
New Jersey	Bloomfield	Aug. 5, 8 p.m.	Pav. and grading number streets	Town Clerk.
Minnesota	Winona	Aug. 5	Constrn. 16 miles of road	J. P. Winczewski, County Aud.
Pennsylvania	So. Bethlehem	Aug. 5, 8 p.m.	Constrn. 18,000 sq. yds. with Amiesite & 1,000 yds. brick pav't	Thos. Ganey, Boro. Sec'y.
Ohio	Lorain	Aug. 5, 1 p.m.	Grad., draining and macadamizing 2 3/4 miles road	F. L. Ellenberger, Clk.
Ohio	Bowling Green	Aug. 5, 1 p.m.	Grad. and macadamizing road and applying tar binder	C. E. Stinebaugh, County Aud.
Florida	Bradentown	Aug. 5, 2 p.m.	Constrn. road	County Commissioners.
New York	Yonkers	Aug. 5	Resurf. several streets with asphalt	Board Contract & Supply.
Ohio	Portsmouth	Aug. 5, 1 p.m.	Constrn. 1.02 miles brick pav't; est. cost, \$14,225.35	J. R. Marker, State Highway Comr.
California	Glendale	Aug. 5	Constrn. cement sidewalks and curbs, grading and oiling road	G. D. Woodbury, City Clk.
New Jersey	Kirkwood	Aug. 5, 3 p.m.	Constrn. concrete sidewalks	S. L. Burgess, Township Clk.
New Jersey	Irvington	Aug. 5, 8 p.m.	Constrn. Telford pav't, brick gutters, flagging, curbing, etc.	M. Stockman, Town Clk.
Florida	Green Cove Spgs.	Aug. 5	Constrn. 24 miles of highway	County Commissioners.
Indiana	Fort Wayne	Aug. 5, 3 p.m.	Constrn. street under railroad track	F. T. Benoy, Chm. B. P. W.
Ohio	Lisbon	Aug. 5, 1 p.m.	Constrn. 1 mile brick road	H. C. McCammon, Pres. Co. Comrs.
Dist. Columbia	Washington	Aug. 5, 2 p.m.	Grad. street, 6,500 cu. yds.	C. H. Rudolph, Chm. Comrs.
Kentucky	Dayton	Aug. 5, 8 p.m.	Constrn. pav't on Sixth avenue	W. L. Glazier, City Engr.
New Jersey	Orange	Aug. 5, 8 p.m.	Constrn. sidewalks, gutters and flagging	O. Dolan, Chm. Com.
Ohio	West Mansfield	Aug. 6, noon	Constrn. 10,000 sq. yds. brick pav't	J. C. Kennedy, Vil. Engr.
Ohio	Martins Ferry	Aug. 6	Repair. Gooseneck road	Town Trustees.
Ohio	Cincinnati	Aug. 6, noon	Imp. road	Stanley Struble, Pres. Co. Comrs.
Indiana	Paoli	Aug. 6, 2 p.m.	Constrn. 13,390 ft. state road	A. B. Ham, Bd. Comrs.
New York	Niagara Falls	Aug. 6, 7:30 p.m.	Constrn. pav'ts on 4 sts	T. H. Hogan, City Clk.
Indiana	Bedford	Aug. 6, 1 p.m.	Constrn. gravel roads	County Commissioners.
Ohio	St. Clairsville	Aug. 6, 11 a.m.	Constrn. 142 miles brick road; est. cost, \$18,378.24	J. R. Marker, State Highway Comr.
Mississippi	Jackson	Aug. 6	Pav. portions of street with brick, bit., sheet asphalt, etc.	City Clerk.
Washington	Seattle	Aug. 6, 2 p.m.	Constrn. "C. B. Howard" road	Otto Case, Clk.
Ohio	Oakley	Aug. 6, noon	Constrn. cement sidewalk	Oscar Kosche, Vil. Clk.
Indiana	Beech Grove	Aug. 6, 8 p.m.	Imp. several streets	M. H. Johnson, Town Clk.
Virginia	Richmond	Aug. 6, noon	Constrn. 1 mile of macadam road	P. St. J. Wilson, State H'way Comr.
Oklahoma	Oklahoma City	Aug. 6, 1:30 p.m.	Repair. number of streets with sheet asphalt	C. R. Goucher, City Clk.
New Jersey	Elizabeth	Aug. 6, 3 p.m.	Resurf. with bitulithic, amesite, warrenite or other bituminous paving several streets	J. L. Bauer, County Engr.
Washington	Seattle	Aug. 6, 2 p.m.	Constrn. road	Board County Commissioners.
Alabama	Wetumpka	Aug. 6, noon	Grad. and surfacing with gravel 8 miles of road	Board Elmore County Commissioners.
Alabama	Stevenson	Aug. 6, noon	Grad., draining and macadamizing road	County Commissioners.
Mississippi	Greenwood	Aug. 6, noon	Constrn. 25,000 yds. pav't	R. C. Clifton, Clk.
Alabama	Scottsboro	Aug. 6, noon	Macad. roads; cost, \$14,000	J. S. Allen, City Engr.
Indiana	Brazil	Aug. 6, 11:30 a.m.	Constrn. macadam roads	County Commissioners.
New York	Newburg	Aug. 6, 5 p.m.	Pav. street with asph. block, bit., vit. brick or Hassam pav't, 3,400 sq. yds. paving	City Clerk.
Indiana	Marion	Aug. 6, 2 p.m.	Constrn. 4 stone and gravel roads	E. H. Kimball, County Aud.
Indiana	Decatur	Aug. 6, 10 a.m.	Constrn. macadam roads	H. S. Mischaud, County Aud.
Indiana	Crown Point	Aug. 6	Constrn. 8 gravel roads	Board of Commissioners.
Washington	Port Orchard	Aug. 7, 9 a.m.	Constrn. permanent highway No. 1	J. M. Peterson, County Aud.
Alabama	Greenville	Aug. 7, 10 a.m.	Constrn. 12 miles sand clay road; cost, \$17,000	E. A. Staggs, County Aud.
Ohio	Portsmouth	Aug. 7, noon	Imp. 7,500 ft. road	T. C. Patterson, County Aud.
Mississippi	Macon	Aug. 7	Constrn. 24.5 miles sand clay road; also 16 miles gravel road (separate bids)	Road Comrs., District 3; Wheelock Engineering Co., Birmingham, Ala.
New Jersey	Glen Falls	Aug. 7, 8 p.m.	Constrn. pav't on 2 streets	City Council.
Mississippi	Corinth	Aug. 7, 2 p.m.	Constrn. 8 1/2 miles gravel or petrolithic roads	County Supervisors.
Maryland	Berlin	Aug. 7, 10 a.m.	Constrn. 16,000 sq. yds. cement, concrete or macadam pav't and laying 10, 12 and 15-in. pipe	O. Harrison, Mayor.
California	Santa Ana	Aug. 7	Constrn. county road, including bridges and culverts	Board Supervisors.
Ohio	Upper Sandusky	Aug. 7	Constrn. tar macadam road	Peter Frank, Jr. Co. Aud.
Indiana	Shelbyville	Aug. 7, 10 a.m.	Imp. highway	F. W. Fagel, Co. Aud.
Pennsylvania	Nether Providence	Aug. 8, 6 p.m.	Macadamizing highways	J. S. Rogers, Wallingford.
Pennsylvania	Wallingford	Aug. 8, 6 p.m.	Grad. and macadam, several sections of public highways	J. S. Rodgers, Sec'y Bd. Comrs.
Texas	Corpus Christi	Aug. 9	Constrn. street pav'ts	N. Scales, Chm. Comrs.
Ohio	Cincinnati	Aug. 9, noon	Resurf. Cleves and Warsaw pike	Stanley Struble, Pres. Co. Comrs.
Ohio	Columbus	Aug. 9, 10 a.m.	Constrn. 2.14 miles bit. conc. pav't, est. cost, \$22,044.80; alternative bids constrn. with bit-treated water-bound mac., est. cost, \$18,190.82	J. R. Marker, State Highway Comr.
Pennsylvania	Williamsport	Aug. 9, 5 p.m.	Constrn. 2,400 yds. brick pav't	J. J. Galbraith, City Clk.
Ohio	Hamilton	Aug. 9, noon	Imp. Walnut street	I. A. Holzberger, Dir. Pub. Serv.
Texas	Houston Heights	Aug. 10, 8 p.m.	Pav. with gravel or shell 10 miles of streets	D. Barker, Mayor.
Indiana	Richmond	Aug. 10, 11 a.m.	Imp. Richmond and Newport turnpike	Commissioners.
Wisconsin	Racine	Aug. 10	Constrn. pav'ts, curbs, gutters, etc.	F. H. Connolly, City Engr.
Indiana	Muncie	Aug. 10	Constrn. pav'ts	City Clerk.
Indiana	Muncie	Aug. 10, 10 a.m.	Improving highway	F. M. Williams, Co. Audr.
Ohio	Lisbon	Aug. 12, 1 p.m.	Constrn. 1 1/2 miles brick road	Co. Comrs.
Rhode Island	Woonsocket	Aug. 12, 8 p.m.	Re-establishing grades on number of sts and sidewalks	Wm. O. Park, City Clk.
Indiana	Fowler	Aug. 12	Constrn. Matthew-Moran free-stone road	L. Shipman, County Aud.
North Dakota	Bismarck	Aug. 12, 8 p.m.	Grad. streets	R. H. Thistlethwaite, City Aud.
Ohio	Lisbon	Aug. 12	Constrn. brick and Tarvia road	County Commissioners.
Alabama	Marion	Aug. 12, 2 p.m.	Constrn. 4 1/2 miles gravel roads	County Commissioners.
Alabama	Rockford	Aug. 12, 2 p.m.	Constrn. 6 miles top-soil road	County Commissioners.
West Virginia	Princeton	Aug. 13, noon	Constrn. 3 miles road	Mayor Pease.
Texas	Temple	Aug. 13, 8 p.m.	Pav. Central avenue with brick or creosoted blocks	M. O. Woodward, City Sec'y.
Alabama	Livingston	Aug. 13, noon	Constrn. 3 1/2 miles chert road	County Commissioners.
Ohio	Cleveland	Aug. 14, 10 a.m.	Constrn. 2.94 miles brick pav't	County Commissioners.
Ohio	LaGrange	Aug. 15, 1 p.m.	Macadamizing road	F. I. Ellenberger, Co. Clk.
Ohio	Elyria	Aug. 15, 1 p.m.	Grad. and macadamizing road	Commissioners.



## BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
Missouri.....	Fulton.....	Aug. 15.....	Constrn. 3,630 sq. yds. brick paving; 1,550 ft. concrete curb.	P. D. Thurmond, City Engr.
Ohio.....	Toledo.....	Aug. 19, 10 a.m.....	Grading, draining and macadamizing county roads.....	C. J. Sanzenbacher, Co. Audr.
Mississippi.....	Forest.....	Aug. 26.....	Constrn. 2,500 miles gravel macadam road.....	G. A. McIlheney, Sec'y Comrs.
Illinois.....	Kankakee.....	Aug. 30 (about).....	Constrn. 65,000 sq. yds. vit. brick paving.....	W. A. Brown, Engr.
Florida.....	Ocala.....	Aug. 20.....	Constrn. 12,000 yds. brick.....	B. W. Alpinier, Mayor; R. D. Cregg,
Mississippi.....	Laurel.....	Sept. 1.....	Constrn. brick or creosoted wood pav't, 60,000 yds.....	H. C. Sistrunk, City Clk.
Louisiana.....	Shreveport.....	Sept. 12.....	Constrn. hard surface permanent roadway, 5 miles.....	J. H. Crawford, City Clk.; Iowa
South Carolina.....	Columbia.....	Sept. 14. noon.....	Maintain roads.....	J. T. Bullen, Co. Engr.
				Eng. Co., Clinton, Ia.
				County Supervisors.
<b>SEWERAGE</b>				
Michigan.....	Iron Mountain.....	Aug. 3.....	Constrn. 1,370 feet 48-inch concrete sewer, 1,900 feet 24-inch pipe, laterals, etc.....	Sol. Beuparlant, City Clerk.
Minnesota.....	Brainard.....	Aug. 5.....	Constrn. lateral sewers.....	V. N. Roderick, City Clerk.
Canada.....	Ormskirk.....	Aug. 5.....	Constrn. sewer system, disposal plant and water works.....	J. G. Bryson, Village Clerk.
Ohio.....	Reading.....	Aug. 5.....	Constrn. sanitary sewer.....	W. F. Klopmeier, Clk.
Alabama.....	Mobile.....	Aug. 5, noon.....	Constrn. 22,000 ft. storm sewers.....	Board of Commissioners.
California.....	Santa Maria.....	Aug. 5.....	Constrn. 13,800 ft. 14 and 16-in. clay pipe sewer.....	City Trustees.
Michigan.....	Bay City.....	Aug. 5, 9 a.m.....	Constrn. sewers on 10 streets.....	R. O. Woodruff, Chm. D. P. W.
New Jersey.....	Asbury Park.....	Aug. 5, 8 p.m.....	Constrn. ocean outfall sewer and disposal system.....	Asbury Park Commission.
Iowa.....	Holstein.....	Aug. 5, 7 a.m.....	Constrn. disposal plant.....	W. Schippmann, Mayor.
Oklahoma.....	Oklahoma City.....	Aug. 6, 1.30 p.m.....	Constrn. sanitary lateral sewer.....	C. R. Goucher, City Clk.
New York.....	Brooklyn.....	Aug. 6, 10.30 a.m.....	Constrn. sewers and tanks at hospital.....	E. J. Lederle, Pres.
New York.....	New York.....	Aug. 6, 10.30 a.m.....	Constrn. sewers.....	T. W. Whiddle, Act. Pres. Bor. Brnx.
Ohio.....	Piqua.....	Aug. 6.....	Constrn. 4,750 lin. ft. sanitary sewer.....	A. W. Burton, Dir. Pub. Serv.
Maryland.....	Baltimore.....	Aug. 7.....	Constrn. miscellaneous lateral sewer, sanitary contract 94.....	Board Awarus.
Tennessee.....	Tullahoma.....	Aug. 7, 2.30 p.m.....	Constrn. sewerage system and disposal plant.....	B. W. Wilkins, Chm. Comrs.
New York.....	Binghamton.....	Aug. 7, 4 p.m.....	Constrn. 2,683 ft. 30-in. and 8,645 ft. 27-in. pipe sewers.....	Bd. Contract and Sup., Binghamton;
				Bd. of Trustees, Lestershire.
New York.....	Schenectady.....	Aug. 7.....	Constrn. 23,000 feet 10 to 36-inch tile sewer.....	F. E. Johnson, Sec. Bd. Contract.
New York.....	Brooklyn.....	Aug. 7, 11 a.m.....	Constrn. sewers on numerous streets.....	A. E. Steers, Boro. Pres.
New York.....	Kings Park.....	Aug. 7, 3 p.m.....	Constrn. additions to sewer system and disposal works.....	T. E. McGarr, Sec'y, Albany.
Ohio.....	Hamilton.....	Aug. 9, noon.....	Constrn. storm sewer.....	J. A. Holzberger, Dir. Pub. Serv.
Idaho.....	Weiser.....	Aug. 9.....	Constrn. 48,500 ft. 6 to 24-in. sewers.....	S. H. Travis, City Clk.
Wisconsin.....	London.....	Aug. 10.....	Constrn. sewers.....	C. J. Thompson, City Clk.
Wisconsin.....	Janesville.....	Aug. 10.....	Constrn. drainage ditch.....	Commissioners.
Pennsylvania.....	New Castle.....	Aug. 12, 8 p.m.....	Constrn. storm sewer.....	Perry Williams, County Clk.
Pennsylvania.....	Lansdale.....	Aug. 12.....	Constrn. sewer system and sewage disposal works.....	S. D. Conner, Boro. Sec'y.
Connecticut.....	Hartford.....	Aug. 13, 11 a.m.....	Constrn. sewers in several streets.....	Bd. Contract & Supply.
Louisiana.....	Morgan City.....	Aug. 14, 2 p.m.....	Constrn. water works and sewerage.....	M. D. Shannon, Mayor.
Texas.....	LaGrange.....	Aug. 14, 8 p.m.....	Constrn. 28,000 ft. 6 to 10-in. clay pipe sewers, etc.....	H. W. Spreckles, Mayor.
Kentucky.....	Louisia.....	Aug. 15.....	Constrn. 1,000 ft. 30 to 36-in. single ring brick sewer; 8,400 ft. tile sewer and 23,000 lin. ft. concrete curb and gutter..	City Council.
				W. P. Neatsey, Street Comr.
New Jersey.....	Elizabeth.....	Aug. 15, 8.30 p.m.....	Lower sewer pipe, repaving and building basins.....	Edw. Schaefer, Dir. B. P. Serv.
Ohio.....	Springfield.....	Aug. 15.....	Constrn. Indian Run sewer; cost, \$161,000.....	J. V. Mahoney, Sec. Bd. Con. & Sup.
New York.....	Yonkers.....	Aug. 19.....	Constrn. house sewer in New Place.....	F. W. Raymond, City Aud.
South Dakota.....	Aberdeen.....	Aug. 19, 10 a.m.....	Constrn. 1,100 ft. 8 and 10-in. pipe sewers.....	City Clerk.
Iowa.....	Dubuque.....	Aug. 24.....	Constrn. 7,000 ft. 8-in. sewers.....	
<b>WATER SUPPLY</b>				
Alabama.....	Dothan.....	Aug. 5, noon.....	Constrn. water works and electrical machinery.....	B. R. Pilcher, Chm. Comm.
Minnesota.....	Benidji.....	Aug. 5.....	Constrn. 1,900 feet 4-inch pipe, etc.....	Geo. Stein, City Clerk.
New York.....	Brooklyn.....	Aug. 5, 2 p.m.....	Furn. and install suction ash conveyor plant at Ridgewood pumping station.....	H. S. Thompson, Comr.
Iowa.....	Holstein.....	Aug. 5.....	Constrn. septic tank, filter and sludge beds.....	A. G. Merkley, Town Recorder.
Minnesota.....	Morris.....	Aug. 6.....	Constrn. water mains.....	Common Council.
New York.....	New York.....	Aug. 6.....	Constrn. blow-offs for steel pipe siphons.....	Chas. Strauss, Pres. Bd. Water Sup.
West Virginia.....	Parkersburg.....	Aug. 6.....	Constrn. 6,000,000 gallon reinforced concrete reservoir.....	Frank Good, City Clerk.
New York.....	New York.....	Aug. 8, 2 p.m.....	Set fire hydrants, constrn. superstruc. over chambers at reser.	H. S. Thompson, Comr.
Idaho.....	Weiser.....	Aug. 9.....	Constrn. 45,000 ft. 4 to 16-in. mains, reservoirs, etc.....	S. H. Travis, City Clk.
Illinois.....	Geneseo.....	Aug. 13, 8 p.m.....	Constrn. casing and stairway for standpipe.....	J. D. Hill, Chm. Water Com.
Louisiana.....	Morgan City.....	Aug. 14.....	Constrn. water works and purification plant.....	Mayor McD. Shannon.
South Carolina.....	Blackville.....	Aug. 20.....	Constrn. water wks, cost \$21,000; sewage system, cost \$12,000	J. N. Johnston, Engr., Florence.
Louisiana.....	New Orleans.....	Aug. 24, noon.....	Constrn. reinforced concrete siphon.....	F. S. Shields, Sec'y.
<b>LIGHTING AND POWER</b>				
New York.....	Buffalo.....	Aug. 5.....	Installing elec. light system at Block Rock Shiplock.....	U. S. Engr.
Canada.....	Canora, Sask.....	Aug. 5, noon.....	Constrn. crude oil engine elec. generator and equipment.....	H. M. Sutherland, Sec'y-Treas.
Indiana.....	Indianapolis.....	Aug. 15.....	Maintain incandescent street lights for 5 years.....	Board Public Works.
			2½-inch lead-covered cable, etc.....	M. A. Fitzsimmons, Village Clerk.
Florida.....	St. Petersburg.....	Aug. 22, 7.30 p.m.....	Supply city with gas.....	W. F. Devine, City Clk.
New York.....	White Plains.....	Aug. 26.....	Furn. 43 arcs, 1200 c.p., and 700 incandescents, 20 c.p.....	Board Trustees.
Indiana.....	Greencastle.....	Aug. 27.....	Light city for period of 10 years, beginning July 1, 1913..	S. C. Sayers, City Clk.
Canada.....	Edmonton, Alta.....	Aug. 23.....	Constrn. gas plant.....	City Commissioners.
Louisiana.....	New Orleans.....	Sept. 19, noon.....	Furn. & erect piping & auxiliaries for power house No. 2..	F. S. Shields, Sec. Sew. & Watr. Bd.
<b>FIRE EQUIPMENT</b>				
Michigan.....	Mt. Clemens.....	Aug. 5.....	Furn. 500 ft. fire hose.....	A. A. DeVanderer.
Pennsylvania.....	Sharon.....	Aug. 6, noon.....	Furn. automobile fire engine.....	O. J. Denny, Boro. Sec'y.
Mississippi.....	Moss Point.....	Aug. 6, 7.30 p.m.....	Furn. fire engine, 3 hose carts, 1,500 ft. 2½-in. hose.....	C. M. Fairley, Clk.
Montana.....	Great Falls.....	Aug. 6.....	Furn. 1,000 ft. fire hose.....	Dir. Public Safety.
Canada.....	Saskatoon, Sask.....	Aug. 26, noon.....	Furn. 1 motor comb. chem. and hose wagon and 1 motor-driven city service truck.....	City Commissioners.
<b>BRIDGES</b>				
Mississippi.....	Batesville.....	Aug. 5.....	Constrn. steel bridge.....	Board of Supervisors.
Indiana.....	Brookville.....	Aug. 5.....	Constrn. bridge.....	C. G. Reiffal, County Auditor.
Indiana.....	Rensselaer.....	Aug. 5.....	Constrn. three steel and three concrete bridges.....	J. P. Hammond, County Auditor.
Pennsylvania.....	Waynesburg.....	Aug. 5.....	Constrn. concrete bridge.....	County Commissioners.
Maine.....	Bangor.....	Aug. 5, noon.....	Bldg. extension to masonry abutment.....	C. W. Mullen, Mayor.
Mississippi.....	Raymond.....	Aug. 6.....	Constrn. bridge.....	County Supervisors.
Florida.....	Tampa.....	Aug. 6.....	Constrn. retaining walls and bulkheads at bridge approach..	H. Guthrie, County Auditor.
New York.....	New York.....	Aug. 6, noon.....	Constrn. 2 reinforced concrete bridges.....	Board Water Supply.
Florida.....	West Palm Beach.....	Aug. 6, noon.....	Constrn. steel draw bridge and timber approach.....	H. R. Rousseau, Chm. County Comrs.
New York.....	Auburn.....	Aug. 6, 8 p.m.....	Constrn. steel bridge over Owasco River.....	J. H. Hanlon, City Clk.
Indiana.....	Huntington.....	Aug. 7.....	Constrn. three concrete bridges.....	Board of Public Works.
Pennsylvania.....	Clymer.....	Aug. 7, 1 p.m.....	Constrn. double-arch reinforced concrete bridge.....	Commissioners.
Georgia.....	Cartersville.....	Aug. 7.....	Constrn. several bridges.....	G. A. Veach, Chm.
Illinois.....	Bethany.....	Aug. 8, 3 p.m.....	Constrn. 2 concrete bridges; cost, \$1,500.....	Wm. Stables, Twmp. Clk.
Washington.....	Davenport.....	Aug. 8.....	Constrn. 3 steel bridges.....	County Commissioners.
Ohio.....	Columbus.....	Aug. 9.....	Constrn. reinforced arch bridge.....	County Commissioners.
Indiana.....	Lawrenceburg.....	Aug. 12.....	Constrn. two bridges.....	W. S. Fagaly, County Auditor.
Alabama.....	Seale.....	Aug. 12.....	Constrn. 90-ft. concrete arch bridge.....	County Commissioners.
Ohio.....	Cincinnati.....	Aug. 16.....	Constrn. concrete bridge.....	Albert Reinhardt, Clk.
Ohio.....	Cleveland.....	Aug. 21, 11 a.m.....	Constrn. bridge work.....	J. F. Goldenbogen, County Clk.

## BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK.	ADDRESS INQUIRIES TO
Canada.....	Calgary, Alta.....	Aug. 31 (ext. date)...	Constrn. 3 reinforced concrete bridges.....	J. M. Miller, City Clk.
Louisiana.....	Tallulah.....	Sept. 4.....	Constrn. 3 bridges.....	W. H. Harvey, Sec'y.
<b>MISCELLANEOUS</b>				
Dist. Columbia	Washington.....	Aug. 5, 2 p.m.....	Furn. steam road roller.....	District Commissioners.
Massachusetts	New Bedford.....	Aug. 5, 4 p. m.....	Bldg. shelter house and equipping Hathaway playground...	C. P. Sawyer, Clk. Comm.
Delaware.....	Wilmington.....	Aug. 6, 10 a.m.....	Remov. waste paper, etc., for city.....	L. V. Christy, Sec'y.
New York.....	New York.....	Aug. 6, 10 a.m.....	Constrn. station house, prison and garage.....	R. Waldo, Police Comm.
New York.....	Long Island City	Aug. 6, 11 a.m.....	Furn. 1 automobile.....	M. E. Connolly, Boro. Pres.
New Jersey...	Trenton.....	Aug. 9, 11 a.m.....	Furn. automobile identification markers.....	J. H. Lippincott, Comr. Motor Veh.

## STREET IMPROVEMENTS

**Gadsden, Ala.**—Plan to pave six more streets at cost of \$110,000, fund to be secured through bond issue, has been submitted to Special Committee of Council by City Engineer Charles L. Marsh. Under his plan Mr. Marsh would reduce cost of street work by more than \$300.

**Lockeford, Cal.**—Luther Locke has presented petition to Supervisors at Stockton, requesting that body to widen improved road through Lockeford from 16 to 24 ft. Section of road which request covers is principal street of this place and is 2,500 ft. long.

**Los Angeles, Cal.**—Extensive street improvements have been petitioned for.

**Los Angeles, Cal.**—Construction of street through Eastlake park in order to connect Main st. and Alhambra is recommended.

**Monrovia, Cal.**—Falling Leaf ave. is to be put in good shape throughout its entire length. It crosses city east and west and is link in boulevard system. On west it connects directly with Huntington drive and on east with Foothill boulevard.

**Oakland, Cal.**—City Engineer has been directed to prepare resolutions of intention for sidewalking various streets.

**Oakland, Cal.**—City Engineer has been directed to prepare plans, etc., for improvement of Gray st., from 35th ave. to termination of Gray st.; also for improvement of Nicol ave., between Peralta and Fruitvale aves.

**San Francisco, Cal.**—Harbor Board is discussing plans for repaving Embarcadero, from Clay st. south to Lombard st.

**Redwood City, Cal.**—Right-of-way has been granted for proposed system of boulevards in San Mateo County for which \$1,500,000 bond election will be held.

**San Leandro, Cal.**—Widening and improving of East Fourteenth st., from Stanley rd. to bridge in central part of city is being discussed.

**Middletown, Conn.**—Street Committee of Common Council has signed contract with Amiesite company to lay their permanent road material known as "Amiesite" on Sumner st. and work will be started shortly.

**Newark, Del.**—Newark Council is preparing to ask bids for macadamizing Cleveland ave., which is expected to cost about \$12,000.

**St. Augustine, Fla.**—County Commissioners will consider extensive road and highway improvements.

**Tampa, Fla.**—It has been decided to advertise for bids putting asphalt filler between brick to be used in paving Grand Central ave., from Boulevard west to Willow ave.

**Atlanta, Ga.**—Highland ave. will shortly be paved with vitrified brick.

**Swainsboro, Ga.**—Mayor and council have also ordered that Moring st., one of the most popular thoroughfares of city, be widened at once.

**Peoria, Ill.**—Spring st. will be paved with brick, from Adams st. to Perry ave.; also Board has decided to pave Bigelow st.

**Quincy, Ill.**—Vermont st., from Eighth st. to Eighteenth st., has been ordered paved with concrete, with pitch top dressing. Entire depth of pavement is to be 6½ in. Estimated cost of work is \$19,231.77, distributed as follows: 730 cu. yds. excavating, grading and removing surplus material, at 40 cts. per cu. yd., \$312; 720 cu. yds. filling with crushed limestone, at \$1.50 per cu. yd., \$1,080; 18,802.3 sq. yds. of Portland cement concrete paving, 6 in. thick, complete in place, at 80 cts. per sq. yd., \$15,041.84; 8,978 lin. ft. of pitch filler, longitudinal expansion joint 1 in. thick, between curbing and wearing surface, on both sides of the paving, complete in place, at .024 cts. per lin. ft., \$215.47; 6,480 lin. ft. of pitch filler, transverse expansion joint, one-fourth in. thick, complete in place, at .018 cts. per lin. ft.,

\$116.64; 6,270 gallons pitch surface dressing for wearing surface, complete in place, at .125 cts. per gallon, \$783.75; 130.6 cu. yds. of sand surface dressing, one-fourth of an inch thick, complete in place, at \$1.50 per cu. yd., \$195.90; 283 lin. ft. of dressed sandstone curbing, set on vitrified brick, with necessary filling, complete in place, at 10 cts. per lin. ft., \$1,698.80; 4,000 lin. ft. of aligning and resetting curb now located on line of improvement, including necessary filling, complete in place, at 10 cts. per lin. ft., \$400. Cost of making, levelling and collecting the special tax therefor, and all lawful expenses attending the same, \$915.77; total, \$19,231.17.

**Angola, Ind.**—Considerable paving is contemplated by City Council.

**Indianapolis, Ind.**—Committee has decided to report favorably on ordinance appropriating \$3,000 for fund for maintenance of unimproved streets.

**Indianapolis, Ind.**—Resolutions have been adopted for improvement of Pennsylvania and 36th sts.

**Michigan, Ind.**—Petition has been filed asking for stone or macadamized road to extend along certain highways. Fred A. Hansheer, Auditor.

**Onawa, Ia.**—Oiling of city streets has proved decided success, and petition has been circulated among property owners along Iowa ave. for oiling of that street. Oiling preparation costs 7 cts. a gallon, and the city expects to get carload of it, which will include sprinkling apparatus and man to operate it.

**Augusta, Me.**—Executive Council has voted to expend \$14,100 of automobile fund on sections of trunk lines in Auburn, Gardiner, Carey Plantation, Connor Plantation, Caribou, Holden, Dedham, Orneville and Carroll. Auburn will receive \$5,000 to go with \$10,000 appropriated by the city. Caribou will get \$1,000 to match \$1,000 appropriated by town. Gardiner will spend \$1,000 and State \$2,000 in improving line of road from Gardiner to Augusta.

**Bangor, Me.**—Order has been passed to buy new road machine.

**Pittsfield, Me.**—At special town meeting it was voted to raise sum of \$2,100 to be used to macadamize portion of Main st.

**Palmer, Mass.**—Board of Selectmen has appropriated \$50,000 for construction of new highways.

**Grand Rapids, Mich.**—John C. Nuveen & Co. have been awarded \$200,000 bond issue for building of good roads in Kent County.

**Kalamazoo, Mich.**—Citizens of Kalamazoo and Battle Creek are at work on plan to macadamize road between two cities. It is planned to build highway by popular subscription. It is estimated that road could be macadamized for less than \$100,000.

**Portage, Mich.**—Township Board is advertising for sale of \$25,000 bonds authorized by electors for building of Otter Lake rd.

**Duluth, Minn.**—Municipal Committee of Commercial Club will take steps to have avenues, especially steep avenues in central part of city, paved with some suitable material.

**Duluth, Minn.**—The Board of Public Works has been directed to circulate petitions for improving First st., from First ave. east to Sixth ave. east; for constructing a concrete curb and gutter on West Fifth st., between Twenty-third and Twenty-fifth aves., and for the grading of Twenty-first ave. east from Fourth st. to Woodland ave.

**Ely, Minn.**—Petition has been presented to City Council by 115 out of 148 owners of Camp and Sheridan st. property, asking Council to extend all improvements on those two streets, from Second ave. east to Sixth ave. east, and also on all intervening avenues and streets.

**St. Paul, Minn.**—Fifth st. property owners are circulating petition to get Council to pass resolution to force city rail-

way company to pave portions of street between rails and within limit of 2 ft. beyond each outer rail, which council requires street car company to pave, with creosote blocks. Fourth and Fifth sts. are both to be paved with creosote blocks.

**St. Paul, Minn.**—Snelling ave., from University ave. to Great Northern right of way, or about 300 feet north of Taylor st., will be paved, probably with creosote block, at cost of nearly \$50,000, by action taken by Board of Public Works.

**St. Paul, Minn.**—Appropriation of \$8,000 has been secured for improvement of roads in Second Ward. Point Douglas rd. was allotted \$4,658.50 for macadam and upper Afton rd. was allowed \$3,338.46.

**Chillicothe, Mo.**—Members of City Council have discussed at length advisability of oiling more of streets in residence district of city. Estimate will be secured regarding cost per block for oiling streets and if cost is not too great, it is likely many of streets will be oiled during summer.

**Fulton, Mo.**—Contract for placing of gravel on roads will be let early this fall. W. R. Heagler, Chief Engineer.

**Camden, N. J.**—Ordinance has been passed directing paving of Division st., from Front st. to Second st. with Belgian blocks, on 4-in. concrete foundation; also, improvement of Mt. Vernon st., from Mt. Ephraim ave. to Haddon ave., and Wildwood ave., from Haddon ave. to Kenwood ave., by paving with Belgian blocks on 4-in. concrete foundation. Jas. E. Hewitt, President of City Council.

**Elizabeth, N. J.**—Question of paving section of Geier ave., between Garden and Sumner sts., is being urged.

**Millburn, N. J.**—Ordinances have been passed at meeting of Township Committee of Millburn for improvement of roads in Short Hills and Wyoming sections.

**Millville, N. J.**—Ordinance is being considered for paving High st., from Main to Broad; Main st., from Buck to Second, and Broad st., from Buck to Second.

**Perth Amboy, N. J.**—Council is planning to pave Water st., between Smith and High sts., and Street Commissioner has been authorized to advertise for bids for paving Mechanic st. with asphalt blocks.

**Passaic, N. J.**—Director of Streets and Public Improvements will shortly advertise for bids for grading, curbing, guttering and macadamizing of Willett st. Thos. H. Watson, City Clerk.

**Perth Amboy, N. J.**—Ordinance has been passed to pave Mechanic st., from Fayette st. to Washington st., with 2-in. asphalt blocks with appurtenances. W. La Rae, City Clerk.

**Upper Penn's Neck, N. J.**—Special election will be held July 30 in Upper Penn's Neck Township, Salem County, to vote upon appropriation of \$1,000 for improving the River rd. from Pennsville to Pennsgrove.

**Woodbury, N. J.**—Commissioner has approved plans for resurfacing Delaware st. to Thoroughfare, this city, allowing county \$3,500 for this, and also \$1,500 for repairing damages due to storm.

**Canastota, N. Y.**—Village Board is planning for paving of Chapel st., from North Peterboro st. to New Boston st., with brick. Estimated cost is \$15,000.

**Carthage, N. Y.**—State st. paving contract will be awarded in August.

**Lackawanna, N. Y.**—City Clerk Monaghan, by direction of Board of Common Council, has completed arrangements for special election at which property owners will vote on proposition to raise \$60,000 for purpose of paving between and outside tracks of Buffalo & Lake Erie Traction Co. on Hamburg turnpike.

**Mamaroneck, N. Y.**—Bonds in sum of \$15,000 for street paving have been sold.

**Niagara Falls, N. Y.**—Resolutions have been adopted for paving or macadamizing of Peirce st. at estimated cost of \$14,700; of 13th st. at estimated cost of



\$15,800; of 16th st. at estimated cost of \$13,070, and of 17th st. at estimated cost of \$12,800. Thos. H. Hogan, City Clerk.

**Niagara Falls, N. Y.**—Work of repairing asphalt streets in city is to continue. Common Council granted request of City Engineer Parkhurst for issue of certificates of indebtedness to amount of \$3,000 with which to carry on work.

**Oswego, N. Y.**—Approximately \$10,000 will be expended within next few weeks on street improvement, which will be limit for this year. John Henrick has signed contract for paving of West Utica st., from east end of upper bridge to intersection of West Second st. Work, which will cost little over \$9,000, will be started shortly.

**Port Jervis, N. Y.**—The State Department of Highways officials have announced that department has approved request of Common Council of Port Jervis to have built as county highways east Main st., West Main st. and Grand View ave., either of brick pavement or macadam road, to connect Port Jervis, Greenville State road on east and Port Jervis-Cahoonzie State road on west.

**Syracuse, N. Y.**—Plans are being made for repairing path of State Fair boulevard.

**Greensboro, N. C.**—At election held for \$130,000 bond issue for street improvement, sewerage extension, market and opera house improvement, proposition carried by safe majority on each of the four issues.

**Statesville, N. C.**—Series "B" of Iredell road bonds, amounting to \$150,000 has been sold by County Commissioners to Mayer, Peppe & Walter, of Cincinnati, O., for \$155,701.

**Akron, O.**—Petition has been presented to Council, signed by residents of East Market st., between High and College sts., asking that the street between those points be paved either with brick or Medina stone. Residents of North Case ave. filed petition for paving of that street. Paving petitions were also filed by residents of West Thornton st., from Bowery to Manchester rd., and residents of North High st., from Ridge st. to end.

**Dayton, O.**—Bonds in sum of \$20,400 for street intersections have been awarded to Breed & Harrison, Cincinnati; \$5,700 for sidewalks, to Stacy & Braun, Toledo, and \$3,900 for paving of Brightwood ave., to Davies, Bertram & Co., Cincinnati.

**Girard, O.**—Bids have been sold in sum of \$52,500 for paving of State st.

**Hartwell, O.**—Bids will be received at the office of the Clerk of the Village until 12 o'clock noon of August 21, 1912, for purchase of bonds in sum of \$4,000,000 for road improvements. Frank J. Spinning, Clerk of Village.

**Youngstown, O.**—Ordinances have been passed providing for issuance of bonds for improvement of various streets. M. F. Hyland, City Clerk.

**Youngstown, O.**—County Commissioners have passed resolutions authorizing County Surveyor to get bids on various small culverts about county.

**Chester, Pa.**—Resolution has been passed that Street Committee advertise for bids for repaving of East side of Market st., between Graham and Front sts.

**Corry, Pa.**—It is expected that brick will shortly be laid on North Center st. pavement, which will connect street with macadamized road.

**Erie, Pa.**—Resolution has been adopted to advertise for bids for sale of \$185,000 in city bonds. These include \$10,000 for lower State st. and \$5,000 for opening of State, from 26th st. to city line.

**Erie, Pa.**—Steel and reinforced culvert will be constructed over Millcreek at 26th and State sts.

**Erie, Pa.**—County Commissioners have given their approval to construction of brick pavement on East Lake rd., from eastern city limits to western line of Harborcreek township.

**McKeesport, Pa.**—Mayor H. S. Arthur has signed bond ordinance of \$15,000 for repaving of "missing link" on Fifth ave., between Coursing st. and Sinclair st., which has been passed finally by Select Committee.

**Reading, Pa.**—Ordinances have been passed authorizing grading and paving of various streets. C. M. Huber, secretary.

**Warren, Pa.**—Contracts for building of many stretches of roads in Warren and Erie Counties are being prepared and advertisements for bids are being placed as contracts are ready. Bids are being asked for on construction of two pieces of road in Erie County. They are at Albion, one of them passing through village and other beginning at village. Two pieces comprise between three and four miles and actual construction will commence as

soon as possible after contracts are awarded.

**York, Pa.**—Residents of Pennsylvania ave. are discussing paving of that highway under per-foot-front system.

**York, Pa.**—The Topographical Survey Committee of City Council has decided to recommend affirmatively ordinance providing for opening of Plum alley in west end.

**York, Pa.**—Monaghan Township is to get 5,500 ft. more of good road. County Commissioners have approved township's application for road and forwarded application to State Highway Department at Harrisburg.

**Pawtucket, R. I.**—Resolution has been passed providing for appropriation of \$31,000 for improvement of Central ave.

**Woonsocket, R. I.**—Sum of \$10,000 is needed for repairing of various streets.

**Knoxville, Tenn.**—Bids will be asked shortly for paving of improvement districts. Two are in West Knoxville, one on Forest ave., from Fourth st. to Ninth st. and alley lying between Forest ave. and Highland ave.; also Henley st., from Main ave. to Cumberland ave.

**Lookout Mountain, Tenn.**—Bond issue of \$25,000 will be voted on August 10 for building streets of town.

**Kenbridge, Va.**—Sum of \$40,000 worth of bonds have been voted for road improvement.

**Richmond, Va.**—City Attorney has been directed to acquire property to open Main st., from West to Auburn sts., to cost \$2,000.

**Richmond, Va.**—Contracts have just been let by State Highway Commission for construction of two pieces of road in Stafford County, each 10 miles in length, one of which will eventually become part of Richmond-Washington highway. One of the roads leads from Fredericksburg toward Warrenton, in direction of Fauquier County line, while other will run from Fredericksburg towards Gainesville.

**Virgelina, Va.**—Election for bond issue will be held on Monday, August 5, to ascertain sense of voters on question of borrowing not exceeding \$5,000 for purpose of laying sidewalks as well in business part of town as along streets in residential section.

**Kalama, Wash.**—Initial contract for hard street paving having been awarded to Pacific Paving Co., of Vancouver, work is to start at once. Material to be used on First and Fir sts. is bitulithic, and at start four blocks on First st. and one block on Fir st. will be paved with it. Streets are 80 ft. wide. Under contract price of \$16,171.33 another block on Fir st. is to be macadamized, while from one end of hard paving on First st. there is to be built for some distance a 20-ft. roadway.

**Wheeling, W. Va.**—Bond Commissioners in charge of disposal of \$52,500 street improvement issue have reported sale of bonds to Germania Half Dollar Savings Bank of Wheeling.

**Portage, Wis.**—Sum of \$5,200 has been raised for good roads, and it is expected that work will begin immediately.

**Superior, Wis.**—Bids for paving of portions of 19th st., North Eighth st. and Catlin ave. have been opened by Board of Public Works. Ed Johnson was low bidder for 19th st. job, his figure being \$6,324.14. Diffor & Peterson were low on both North Eighth st. and Catlin ave. jobs, bidding \$14,835.32 on Eighth st. and \$1,742.94 on Catlin ave. Bids on 19th st., from Banks ave. to Hammond ave. were: Peter E. Bergman & Co., \$10,254.58; S. A. Riches, \$8,971.69; Ed. Johnson, \$6,324.14; Diffor & Peterson, \$7,42.67. Bids for paving North Eighth st., from Hammond to Catlin ave., were: S. A. Riches, \$14,967.05; Diffor & Peterson, \$14,835.32; Ed. Johnson, \$16,533.16; P. Bergman & Co., \$20,085.22. Bids for paving Catlin ave., from Eighth st. to Winter st.: S. A. Riches, \$1,984.28; P. Bergman & Co., \$2,354.10; Diffor & Peterson, \$1,742.94; Ed. Johnson, \$1,920.75. All of streets are to be paved with concrete for width of 24 ft.

#### CONTRACTS AWARDED

**Coalinga, Cal.**—By County Board of Supervisors, to W. E. Finch, at \$13,490, for constructing Coalinga-Parkfield rd. about 9 miles from this city, to Monterey County line.

**Fresno, Cal.**—For grading and construction of Coalinga-Parkfield rd., to W. E. Finch, at \$13,490. Length is 9 miles.

**Los Angeles, Cal.**—To John W. Polcaro, at \$48,983, for improving Santa Susanna Pass rd.

**Tripoli, Cal.**—By Board of Trustees,

for grading, oiling and constructing sidewalks on Laurel st., to Fred R. Sinclair, of Glendale. Work is to be begun immediately.

**Tropico, Cal.**—To D. C. Howard, Merchants' Trust Building, Los Angeles, at \$12,000 for oiling and tamping, grading and constructing curbs and sidewalks on Acacia and Adams sts.

**Jacksonville, Fla.**—For furnishing concrete sidewalks on Adams st., to Dixie Concrete Company, whose bid was \$1.02 per yd.

**Cairo, Ill.**—To James Butler, for furnishing and placing upon stretches of roads designated—eight different sections—2,400 yds. of hill gravel. Prices ranged from 80 cts. to \$2.02 per cu. yd., hill gravel being cheaper.

**Decatur, Ill.**—To S. A. Tuttle, 215 North Main st., for 12,000 sq. yds. vitrified brick paving and 16,000 lin. ft. concrete curb and gutter on E. North st.

**East St. Louis, Ill.**—For improvement of Lynch ave., Twenty-sixth st. and Caseyville rd., by Board of Local Improvements to Meyer & Thomas, East St. Louis, at \$184,132.

**Joliet, Ill.**—To R. F. Conway Co., at \$15,303.50, for paving Second ave., between Eastern ave. and Richards st.

**Allison, Ind.**—For five miles of hard road, to Pat Lanahan, of Vincennes, at about \$13,000. Two miles of this are on Plank road, one mile on Warner rd. and one mile on Pinkstaff rd.

**Elkhart, Ind.**—By Commissioners of Elkhart County, to Kelleher Miller & Irving, Frankfort, at \$21,900, for macadamizing portion of Oakland rd. south, from city line.

**Indianapolis, Ind.**—The Murray Construction Co., Tennessee corporation that bid on several local contracts some time ago, has assigned to American Construction Co., contract for paving with asphalt Park ave., from Fall creek boulevard to Thirty-fourth st. The Board has approved assignment of contract.

**Des Moines, Ia.**—By City Council, to Bryant Asphalt Co. for paving Crescent drive, from Ingersoll to Thirty-fourth st., and Forty-first st., from University st. to Forest st., at \$1.89 per sq. yd. and 45 cts. extra for grading. Contract has been awarded by City Council to the Turner Improvement Co. for paving Euclid ave. with brick between Sixth and Twelfth sts., at \$1.59 per sq. yd.

**Waverly, Ia.**—To Ford Paving Co., Cedar Rapids, at \$1.65 per sq. yd., by City Council, for construction of 33,600 sq. yds. of paving.

**Lexington, Ky.**—To Carey-Reed Co., for improvement of East Third st., from Broadway to Deweese st., at following prices: Asphalt pavement, type A, \$1.30 per sq. yd.; header stone, 50 cts. per lin. ft.; concrete, \$4.80 per cu. yd.; cement guttering, \$1.25 per sq. yd.; resetting old curb, 15 cts. per lin. ft.; cement curb with steel protection, 90 cts. per lin. ft.; resetting manhole tops, \$2.50 each; manholes, new, \$30 each; resetting old catch basins, \$2.50 each; catch basins, new, \$40 each; 5-in. pipe, 40 cts. per lin. ft.; 8-in. pipe, 60 cts. per lin. ft.; 10-in. pipe, 70 cts. per lin. ft.; 12-in. pipe, 80 cts. per lin. ft.; 18-in. pipe, \$1 per lin. ft.; 24-in. pipe, \$1.75 per lin. ft.; 10-in.  $\frac{1}{4}$  bends, \$1.75 each. J. J. O'Brien is City Clerk.

**Winchester, Ky.**—By City Council for brick paving, to Daniels, Lyste & Douglas, of Anderson, Ind., at following bid: \$2.07 per sq. yd., exclusive of car track; 75 cts. added for portion covered by the track; 60 cts. for curb and gutter; \$20 for inlets; \$40 for manholes; \$1.40 for 25-in. tile; 95 cts. for 18-in. tile; 70 cts. for 15-in. tile, and 60 cts. for 12-in. tile; total, \$35,555.12. Carlisle brick will be used. Two other bids submitted were as follows: Central Construction of Lexington, Carlisle brick, at \$2.40 a sq. yd.; work to be finished by January 1, 1913. It made another proposition to brick street exclusive of street contract for \$2.35, and car space for \$2.70. Its bid on other parts of work was for curbing and guttering, 60 cts. a lin. ft.; inlets, \$20; manholes, \$40; 24-in. tile, \$2; 18-in. tile, \$1.60; 15-in. tile, \$1.20, and 12-in. tile, 80 cts. This all figures out total of \$39,250.80. Roy L. Williams, of Connersville, Ind., bid was for \$2.22 exclusive of car track; 62 cts. added for portion within track; 59 cts. for curb and gutter; \$15 for inlets; \$35 for manholes; \$1.40 for 24-in. tile; 90 cts. for 18-in. tile; 60 cts. for 15-in. tile, and 55 cts. for the 12-in. tile. This totaled up \$37,018.21.

**New Orleans, La.**—For repairing of Magnolia st. and the Claiborne ave. bridges across New Basin Canal, by Commissioner of Public Works George Smith, to Midland Bridge Co., of Kansas City, Mo.

**New Washington, Md.**—For constructing New Washington and Nabb pike, to Walter Taggart, at \$9,742.55.

**Rockville, Md.**—By County Commissioners, to M. J. Grove Co., of Frederick County, for construction of pike from Kensington to Georgetown - Rockville pike, by way of Garrett Park, distance of one and one-quarter miles, bid being about \$11,500.

**Springfield, Md.**—For grading and paving on Nichols st., between Campbell and Main sts., to Fox & Cornwall, at \$1.22 per sq. yd.

**Towson, Md.**—By Baltimore County Highway Commission, to Elder Paving Co., Baltimore, at \$6,212, for improving section of Garrison and North ave., by macadamizing the roadway.

**Detroit, Mich.**—By Department of Public Works for paving and repairing of streets and alleys as follows: Defer pl., from Jefferson ave. to Kercheval ave., with cedar blocks on concrete foundation, and Berea, Medina or any other curbstone that may be bid upon and ordered; Julius Porath, \$6,777.22; T. E. Currie, \$6,643.55; F. Porath & Son, \$6,900.17; W. W. Hatch & Sons Co., \$6,819.59. T. E. Currie is lowest bidder; average cost per sq. yd., including inspection, etc., \$2,449. Holcomb ave., from St. Paul ave. to Kercheval ave., 26 ft. wide, with cedar blocks on concrete foundation, and Berea, Medina or any other curbstone that may be bid upon and ordered; Julius Porath, \$5,917.97; T. E. Currie, \$5,625.40; F. Porath & Son, \$5,797.19; W. W. Hatch & Sons Co., \$5,795.62. T. E. Currie is lowest bidder, average cost per sq. yd., including inspection, etc., \$2,373. La Salle ave., from Warren ave. to McGraw ave., 24 ft. wide, with cedar blocks on concrete foundation and Berea, Medina or any other curbstone that may be bid upon and ordered; J. S. Affeld, \$6,607.93; Julius Porath, \$6,586.46; T. E. Currie, \$6,714.32; F. Porath & Son, \$6,541. F. Porath & Son is the lowest bidder; average cost per sq. yd., including inspection, etc., \$2,46. Meldrum ave., from Gratiot ave. to Forest ave., 26 ft. wide, with cedar blocks on concrete foundation and Berea, Medina or any other curbstone that may be bid upon and ordered; Julius Porath, \$7,777.43; T. E. Currie, \$7,595.28; F. Porath & Son, \$7,701.55; W. W. Hatch & Sons Co., \$7,708.32. T. E. Currie is the lowest bidder; average cost per sq. yd., including inspection, etc., \$2,46. Alley No. 248, in the block between Pallister and Delaware, Second and Third aves., 20 ft. wide with concrete paving; Otis Cement & Construction Co., \$3,755.26; T. E. Currie, \$3,826.55. Otis Cement & Construction Co. is the lowest bidder; average cost per sq. yd., including inspection, etc., \$2,012. Alley No. 249, in the block between East Grand boulevard and Field ave., Waterloo and Charlevoix aves., 18.7 ft. wide (more or less) with concrete; T. E. Currie, \$3,512.90; W. W. Hatch & Sons Co., \$3,371.46. W. W. Hatch & Sons Co. is the lowest bidder; average cost per sq. yd., including inspection, etc., \$1,824. Alley No. 250, alley first east of and parallel to Russell st., from Eliot to Rowena st., 19.7 ft. wide, with brick on concrete foundation; Otis Cement & Construction Co., \$1,335.10; T. E. Currie, \$1,356.46. Otis Cement & Construction Co. is the lowest bidder; average cost per sq. yd., including inspection, etc., \$3,176. Fort st. (repaving), from Trumbull ave. to Fifteenth st., on the south, 60 ft. wide (less double track), with granite blocks on 1-in., 3-in. and 6-in. of concrete and Medina curbstone; Julius Porath, \$36,083.17; T. E. Currie, \$38,116.09; F. Porath & Son, \$35,256.29. F. Porath & Son is the lowest bidder; average cost per sq. yd., including inspection, etc. (granite block to be furnished by city), \$4,125. Contract was awarded in each case to lowest bidder.

**Grand Rapids, Mich.**—For paving with brick, East Fulton st., from Union to Carlton ave., to Carpenter & Anderson.

**Aurora, Minn.**—For cement walks and curbs and gutters for Jackson st., to H. H. Clough & Co., of Duluth, at price aggregating \$6,454.

**Duluth, Minn.**—By Board of Public Works, to P. McDonnell, at \$52,600.49, for grading and paving with sheet asphalt, portion of East Fourth st., and to August Bodin, at \$1,216.25, for construction of cement sidewalks and stairways and grading Park ave.; also for grading and improving Fifth st.

**Duluth, Minn.**—To P. E. Bergman Co., for paving of Winter st. with sandstone blocks. Company's bid was \$28,600.07.

**Fulton, Mo.**—For work on roads of 125,000 cu. yds., to Milville Bros., of Alton, Ill., at \$28,700. They will sub-let

portion of work. W. R. Heagler, Chief Engineer.

**St. Joseph, Mo.**—By Board of Public Works, to DuBois Construction Co., for oiling Krug Park pl., Folsom st., from 26th st. to Ashland ave., and St. Joseph ave., from Krug Park pl. to Myrtle ave. Price paid is 7 cts. per sq. yd. for first oiling and 6 cts. for second application.

**Camden, N. J.**—Street Committee of City Council has awarded contract for repaving of South Second st., from Federal st. to Mechanic st. Street is to be repaved with hand cut dressed Belgian block laid on 4½-in. concrete base. Contract was awarded to Aaron Ward, at \$2.55 per sq. yd. Committee accepted Mr. Ward's bid on Pennsylvania granite block. Mr. Ward, as well as other bidders, also submitted proposals on what is known as Eastern block and their respective bids were as follows: Kelley-McFeeley Co., \$2.74 9-10 per sq. yd.; Aaron Ward, \$2.73; W. Penn Corson, \$2.60; B. F. Sweeten & Son, \$2.63. Committee opened bids for paving of Orchard st., from Mt. Vernon to Chestnut sts., with Belgian block on a 4-in. concrete foundation. Bids were as follows: B. F. Sweeten & Son, \$3 per sq. yd.; Kelley-McFeeley Co., \$2.79; Aaron Ward, \$2.57. This contract was awarded to Mr. Ward. Contract for paving Mickle st., between Sixth st. to Haddon ave., with Belgian block on a 4-in. concrete foundation, was awarded to Aaron Ward, at \$2.59 per sq. yd. Other bids were: W. Penn Corson, \$2.75; Kelley-McFeeley Co., \$2.79; Sweeten & Son, \$2.90. Bids were also opened for paving of River rd., from 19th st. to Hayes ave., on a sand foundation. This contract was likewise awarded to Aaron Ward, at \$1.95 per sq. yd. Other bidders were: Kelley-McFeeley Co., \$2.24 per sq. yd.; B. F. Sweeten & Son, \$2.50; W. Penn Corson, \$2.25. Mr. Ward also got contract for paving of 21st st., from Federal to High sts., with vitrified brick on a 4-in. concrete foundation, at \$1.89 per sq. yd. Other bidders were: B. F. Sweeten & Son, \$2.10; W. Penn Corson, \$1.95; Kelley-McFeeley Co., \$1.94. In this work a McEvoy brick is to be used.

**Jersey City, N. J.**—The Standard Co. has received two additional contracts for repaving of Clinton st., between First and Third sts., and for the repaving of Monroe st., between Newark and First sts. All will be paved with expensive bitulithic. Hudson Contracting Co. has Jackson st., between Paterson ave. and First st., and Tenth st., between Clinton and Grand sts.

**Newark, N. J.**—By Board of Street and Water Commissioners, paving of Walnright st., from Hawthorne ave. to Lyons ave., with brick, to McMahon Construction Co., at \$20,512, and for Runyan st., from Seymour ave. to Osborne ave., with granite, at \$9,109; for Runyon st., from Seymour ave. to Elizabeth ave., with brick, to the Newark Paving Co., First st., at \$23,834; for Lyons ave., from Elizabeth ave. to city line, to H. A. McCann, at \$23,911; for South Twentieth st., from Springfield ave. to Clinton ave., to William Ballard, at \$9,180; for Aldeine st., from Lyons ave. to Edmonds pl., to Charles Carracino, at \$7,528; for Third st., from Bloomfield ave. to Third ave., to Alexander J. Milmoie, at \$8,032; for Second ave., from Third st., to Roseville ave., to A. J. Milmoie, at \$6,143. M. R. Sherrard is Chief Engineer.

**Roselle Park, N. J.**—By Borough Council, for permanent improvements to Chestnut st., from Westfield ave. to borough line at Sumner ave., to Bamberger & Chapman, lowest bidder on basis of Warrenton pavement on broken stone base and with 5-in. curb, amount of contract based on engineer's estimate of quantities amounting to \$34,404.22.

**Trenton, N. J.**—Newton Paving Co. has reaped the bulk of approximately \$125,000 worth of street paving of City Commissioners. Asphalt will be used on streets to be paved by Newton Co., while several brick paving contracts were awarded C. A. Reid & Co. Of total number of contracts given out, Newton Co. received 12 contracts. It is proposed to start paving work within next few weeks and to have greater part of it completed before end of summer. City Engineer Swan made following recommendations concerning awarding of contracts in communication to Commissioners, and they were concurred in: Wood st., Montgomery to Stockton; Metropolitan block, Charles A. Reid & Co. Contracts were granted to the Newton Paving Co. as follows: Davies st., from Third st. to Lalor st., Metropolitan block,

and Lalor st., from Third st. to Lamber-ton st., bituminous concrete; Hermitage ave., Swan plan of asphalt; Union st., Bermudez asphalt; Stuyvesant ave., bituminous concrete; Parkside ave., from the Delaware and Raritan canal to Stuyvesant ave., Swan plan of asphalt; Delawareview ave., from West State st., to Riverside ave., bituminous concrete; Edgemere ave., from Stuyvesant ave. to the Philadelphia and Reading Railroad, bituminous concrete; Hewitt st., from Whit-taker ave. to Liberty st., bituminous concrete; Tyler st., from South Clinton st. to Hudson st., bituminous concrete; Mott st., from Hudson st. to Chestnut ave., bituminous concrete. Mott st., South Clinton ave. to Hudson, Belgian block, McGovern Construction Co.; Magowan st., from East Canal st. to Clinton ave., and on Horseshoe lane, from Belmont Circle to Belmont Circle, cement concrete, Antonio De Lucie; North Broad st., Bermudez asphalt, Newton Paving Co.; Camden st., from West Hanover st. to Passaic st., bituminous concrete, Newton Paving Co.

**Morrisville, N. J.**—Bids have been received by State Highway Department for more than 20 miles of State road, and contracts have been awarded to lowest bidders. One Bucks County contract was awarded to J. F. Shanley Co., Philadelphia, for road from Fallsington-Bristol line to bridge over cut-off railroad near Fallsington, 10,115 ft., nearly two miles, for \$27,331.37. No mention is made of Bristol Township part of same road to Emille, 8,048 ft., for which bids had been invited.

**Westfield, N. J.**—By Town Council to James C. Park, Cranford, at \$14,381, for construction of 12,000 sq. yds. of water-bound macadam.

**Albany, N. Y.**—By Board of Contract and Supply, to Benjamin F. Mulderry, 64 First st., at \$22,950 for improving Ontario ave., between Western and Central aves. Work includes paving and sidewalks.

**Mt. Vernon, N. Y.**—For awarding of contract for paving of bituminous macadam of South Third ave., between First and Third sts., and of Second st., between Third and Fourth aves., to Eastern Asphalt Paving Co., at following bid: New curb, 85 cts.; old curb, 65 cts.; granite blocks relaid, \$1.50; bituminous macadam, \$1.42; brick pavement relaid, \$3; flags, 20 cts.; flags relaid, 5 cts.; headers, \$1. Appian Paving Co. submitted bid as follows: New curb, \$1.05; old curb, 60 cts.; granite blocks relaid, 15 cts.; bituminous macadam, \$1.55; brick pavement, relaid, 50 cts.; flags, 7 cts.; flags relaid, 6 cts.; headers, \$1.05.

**Murphy, N. C.**—By Commissioners of Murphy Township, for construction of 22,000 sq. yds. of macadam pavement, to Noll Construction Co., Chattanooga, Tenn., at \$1.06 per sq. yd.

**Cincinnati, O.**—For street work by County Commissioners of Hamilton County as follows: Oiling Cleves and Dugan Gap rd., Tyler & Breslin, \$472; constructing culvert on New Haven rd., E. Fagally, \$415.55; oiling Lawrenceberg and Harrison rd., Citizens' Road Preserving Co., \$615; concrete culvert on Blue Rock pike, J. Strong, \$993.75.

**Dayton, O.**—For paving of Forest ave., to Contractor Daniel Beard.

**East Youngstown, O.**—Approximately \$40,000 in improvements for village streets has been awarded to several contractors by Council. Joseph Hannon was successful bidder in several jobs and received about \$25,000 worth of work, among which is Wilson ave. grading which will be commenced soon. Patrick and P. G. Grady get Wilson ave. sewer, from McVey's Run to westerly village limits, for \$13,174.50. This was largest single contract let. This firm also bid lowest, \$569, for the Short st. sewer. Jno. W. Gay was awarded contracts at the following figures: Washington st. sewer, \$2,022; grading, \$1,010; 11th st. sewer, \$1,653; grading, \$1,086. Joseph Hannon received following contracts: Wilson ave. sidewalk, \$2,500; Adam st. sewer, \$2,931; Jefferson st. sewer, \$3,908; grading, \$1,693; 12th st. grading, \$2,000; Robinson rd. sewer, \$535; grading, \$1,800. Joseph Hannon was only bidder for grading Wilson ave. but contract was refused as his bid of 60 cts. per cu. yd. was considered too high. He was awarded this work when he bid 50 cts. per cu. yd. after consideration.

**Massillon, O.**—By Director of Public Service, to Wm. H. Vogt & Sons, at \$11,350.56, for construction of brick pavement on West Main st., between Clay and Mill sts.

**Urbana, O.**—To Logan County Constructing Co., for work on Selbert rd. and



have furnished bond in amount of \$2,000 as guarantee that they will fulfill contract. Both contract and bond have been approved by County Commissioners.

**Youngstown, O.**—By Board of Control for Jones st. grading and sewerage, to Joseph Morrison for \$3,212.74, and Oneta st. grading to R. C. Shook for \$2,324.

**Youngstown, O.**—Street contracts aggregating \$46,185 have been let by Board of Control, as follows: Grading and sewerage Ohio ave., Youngstown Construction Co., \$1,347.70; grading Valley st., John McVean, \$2,113; grading Augusta st., William Hynes, \$299.40; paving Wellendorf ave., Turner & Olson, \$11,882.75; paving Albert st., Patrick Mylott, \$16,248.10; paving Oxford ave., R. C. Shook, \$2,295.05; paving Murdock st., Joseph Hanon, \$3,442; paving Martin st., E. J. Kane, \$7,456.30; grading Manhattan ave., R. C. Shook, \$1,101.60.

**Washington, C. H., O.**—By Commissioners of Fayette County, to Hudson & Sumway, Portsmouth, O., at \$14,447, for grading and paving with concrete the Devalon rd.

**Youngstown, O.**—By Commissioners of Mahoning County, to James McCarron, Youngstown, at \$15,645, for grading and paving Youngstown-New Bedford road, in Coitsville Township, with waterbound macadam.

**Youngstown, O.**—Board of Control reconsidered its action of last week in awarding Wellendorf paving to Turner & Olson, and job was given to Patrick Mylott, whose bid was less than other contractor.

**Youngstown, O.**—By Commissioners of Mahoning County, to Fleming & Platt, at \$25,963.86, for grading and paving with brick Youngstown-Struthers rd., in Coitsville.

**Doylestown, Pa.**—By State Highway Department, for constructing roads, as follows: J. F. Shanley Co., Philadelphia, Pa., road in Bristol, \$21,576.04; road in Falls, \$27,331.37.

**Franklin, Pa.**—By Franklin Councils for repaving of Thirteenth st., and paving of Liberty st., from Fourth to First, with selected Bessemer block brick, to Northwestern Construction Co., "the lowest and best bidder." Contract price for Thirteenth st. was \$11,284.40, and Liberty st., \$14,490.60. Chief Engineer Snow had tabulated the bids as follows: Thirteenth st., Bessemer block, Northwestern Construction Co., \$11,284.40; J. M. Leshner, \$11,499; Mack brick, Northwestern Construction Co., \$11,812.40; J. M. Leshner, \$11,587; Porter National brick, Northwestern Construction Co., \$11,812.40; J. M. Lushner, \$11,543. Liberty st., Bessemer block brick, Northwestern Construction Co., \$14,490.60; J. M. Leshner, \$14,689.80; Mack brick, Northwestern Construction Co., \$15,246.60; J. M. Leshner, \$14,815.80; Porter National brick, Northwestern Construction Co., \$15,246.60; J. M. Leshner, \$14,752.80.

**McKeesport, Pa.**—Bids for improvement of Hamilton ave., from Versailles ave. to Stewart st. have been opened by Street Committee of Councils, and Contract awarded to lowest bidder, the D. B. Hough Co., at its bid of \$10,103.14. Next lowest bidder was Bowman Bros. Co., \$10,457.18. There were two other bidders, Hengstler & White and P. F. Rhoades Son. Councils have adopted resolutions awarding contract to lowest bidder and the work will be started as soon as possible.

**Pittsburgh, Pa.**—Bids have been opened by County Commissioners for improvement of Spring Run, Bakerstown and Culmerville and West Run rds. Contract for Bakerstown and Culmerville rd. was awarded to R. H. Cunningham & Sons, lowest bidder. Their price for building 6.03 miles of road with Warrenite surface was \$143,381. Contracts for other two roads were not let as releases and bonds were not in proper shape. Prices submitted for improving of Spring Run rd., for 2.01 miles were as follows: John F. Howley & Co., \$39,969; Neelen & Daly, \$41,155.60; John Connelly, \$47,189.10; Ridge Bros. Co., \$49,977.90; Fehr, Slevin & Ireland, \$59,692.60. Prices for the Bakerstown and Culmerville rd., for distance of 6.03 miles, with Warrenite surface, were: B. H. Cunningham & Sons, \$143,381; Samuel Gamble, \$143,657.80; Henry Hileman, \$146,493.93; John F. Howley & Co., \$152,701.10; Collins-Gordon Contracting Co., \$154,318.80; Fehr, Slevin & Ireland, \$157,684.70; Foley Contracting Co., \$164,348.48; Ridge Bros. Co., \$177,915.38. Prices for West Run rd. for 1.01 miles with Warrenite surface, were: Neelen & Daly, \$46,337.64; Ridge Bros. Co., \$54,170.96.

**Steelton, Pa.**—Borough Council has passed resolution transferring contract for paving of Pine and Harrisburg sts. to C. E. Eastburn Co., of Yardley. Contract was awarded to Delaware Contracting and Constructing Co. through its president, J. S. E. Pardee, who framed his bid informally and without sanction of company. Company would not take bid and asked that it be transferred.

**Washington, Pa.**—By State Highway Department, to Hastings & Piper, Charleroi, Pa., at \$17,907.48, for constructing road in Washington County.

**York, Pa.**—For paving of East Market st., between Sherman and Lehman sts., with sheet asphalt, to Central Construction and Supply Co., Harrisburg, at \$1.80 per sq. yd., by Highway Committee of City Council. There were only two bidders, the Barber Asphalt Co. of Philadelphia, offering to do work at \$1.87. Ordinance authorizing paving provides that cost shall not be over \$1.80. Total yardage to be paved is approximately 9,500, of which 4,000 will be contracted for by York Railways Co.

**Gonzales, Tex.**—To Tips & Burchard, local firm of engineers, by County Commissioners of Gonzales County for engineering work necessary on 75 miles of good roads to be built in Precinct No. 1, under recent bond issue of \$150,000. They will also oversee road building.

**Pascoag, R. I.**—By Town Councilmen Durwood D. Bailey and Frank W. Ross, committee appointed for that purpose, for completing paving of Main st. with granite blocks, to Thomas S. Phillips, of Providence, whose bid was \$2.65 a yd.

**Richmond, Va.**—By City Council, to Atlantic Bitulithic Co., at \$50,000, for paving of Broad st. Contract was awarded to I. J. Smith & Co., but was forfeited.

**Hilliard, Wash.**—For street sprinkling, to A. Passons.

**Milwaukee, Wis.**—By department of Public Works for resurfacing with asphalt, of East Water st., between Michigan and Erie sts., to Badger Construction Co.

**Racine, Wis.**—For paving of High st., from North Main to Michigan sts., to James Cape & Sons, who agreed to put in Barr brick for \$1.85 a sq. ft., and build curbing for 40 cts. per lin. ft. James Cape & Sons were also given partial estimate of \$400 on Grand ave. paving, from Fourteenth to Sixteenth sts., and \$1,100 for paving Grand ave., from Sixteenth to De Koven ave.

**Superior, Wis.**—For paving Winter st. for distance of 3,985 ft. west of Oakes ave., with standstone, to Peter E. Bergman & Co., at \$28,600.07.

## SEWERAGE

**Los Gatos, Cal.**—Plans have been prepared by Frank A. Nikirk, Town Engineer, for improving of sewer system. Cost, \$11,890.

**Sacramento, Cal.**—City Engineer Geo. Randle has about completed comprehensive drainage system that he has been working on for annexed district for past several months, and will shortly file plans and estimates with City Commission for complete sewer system for outlying territory. Cost of gathering data necessary for these plans amounted to about \$7,000.

**San Francisco, Cal.**—Board of Public Works has adopted specifications for construction of sewer and other work on Brannan st., from First st. to Center pl. and has requested Supervisors to set aside \$50,000 to cover cost.

**San Francisco, Cal.**—Sewer bonds in sum of \$400,000 have been sold.

**Quincy, Ill.**—The South Side sewer ordinance, which has been passed, provides for brick and pipe sewers in territory lying between Eighth st., Twenty-fourth st., York st. and Jackson st. Work will include sewers of following dimensions: 48-in. brick, 42-in. brick, 36-in. brick, 33-in. pipe, 30-in. pipe, 24-in. pipe, 21-in. pipe, 18-in. pipe, 15-in. pipe, 12-in. pipe, and 10-in. pipe. The specifications call for 95 brick manholes, 136 brick gutter inlets, 4 brick catch pits and 1,211 6-in. house connection branches. Main lines of sewer lying east and west will be on Jefferson st., from Eighth to a point between Twenty-third and Twenty-fourth; in Washington st., from Sixteenth to Twenty-third; in the alley between State and Ohio, from Fifteenth to Twenty-third. Main lines lying north and south will be on parts of the streets from Fourteenth to Twenty-first, inclusive. Plans call for laying of 36,337.5 lin. ft. of all sizes of sewer, not including house connections. Improvement will be combination sanitary and storm water sewer. Estimated cost is \$77,309.48, which will

make cost just trifle over \$1 per front foot.

**White Hall, Ill.**—Plans have been prepared by City Engineer for construction of sewer system, to cost about \$30,000.

**Indianapolis, Ind.**—After discussion of several hours, Finance Committee of City Council has agreed to report favorably on ordinance appropriating \$10,000 to be used in building experimental sewage disposal plant.

**Indianapolis, Ind.**—Resolutions for number of sewers have been adopted by Board of Public Works as follows: Wade st., from Boyd to State aves., estimated cost, \$3,700; alley north of Thirty-fifth st., from Clifton st. to alley west of Northwestern ave., estimated cost, \$3,700; Kealing ave., from Tenth st. to alley north of North st., estimated cost, \$4,100; Thirty-eighth st., from College to Winthrop aves., estimated cost, \$4,600; Cornelius ave., from Thirty-eighth st. to Forty-fourth st., estimated cost, \$17,100; Carrollton ave., from Thirty-eighth st. to a point 651 ft. north of Fortieth st., estimated cost, \$6,300.

**Muncie, Ind.**—Resolution for another sewer in Eighth st., from Park ave. to Perkins ave., has been adopted.

**Richmond, Ind.**—Construction of sewer in South L st. is being considered.

**Lexington, Ky.**—Ordinance has been passed ordering construction of sanitary sewers on designated portions of Merino st., Georgetown st. and Rand ave. J. J. O'Brien is City Clerk.

**Bangor, Me.**—Order has been passed for building of sewer in King's court, South Brewer, according to engineer's plans.

**Skowhegan, Me.**—Construction of sewer system in various streets is being considered. Estimated cost, \$9,760.

**Baltimore, Md.**—Board of Sewerage Commission has decided to reject bids received for Contract 94, and will re-advertise. Board has approved specifications of Paving Commission for Contracts 34 and 35, for vitrified brick and Belgian block paving, respectively.

**Baltimore, Md.**—Sewerage disposal and betterment of sanitary conditions are being considered.

**Lowell, Mass.**—Extension of sewer outlets into Merrimack river is being considered.

**Traverse City, Mich.**—Acting on State Engineer's recommendation, Council will order immediate sewer connections for all buildings within sewer district.

**Ely, Minn.**—Council has voted to extend Sheridan st. sanitary sewer for several blocks.

**Manchester, N. H.**—Sewer and street bonds in sum of \$100,000 have been awarded to Merrimack River Savings Bank.

**Camden, N. J.**—Ordinance has been passed authorizing construction of sewers, culverts or drains in and along Mickle st., from Marlton ave. to Twenty-sixth st., and along Twenty-fourth st., from Mickle st. to Carman st.

**Fassale, N. J.**—Construction of sewer in Temple pl., between High st. and Erie st., has been authorized. Thos. H. Watson, City Clerk.

**Perth Amboy, N. J.**—Ordinance has been passed to lay 15-in. pipe sewer in West Side ave., from Hall ave. to Neville st., and 18-in. pipe sewer through Jeffries st., to connect with Penn st. sewer. W. La Roe, City Clerk.

**Red Bank, N. J.**—Ordinances in regard to extension of sewer system in Elm pl. and Spring st. have passed second and third readings and have been adopted. Borough Engineer, George D. Cooper, was instructed to prepare plans and specifications for this work and advertise for bids.

**Roselle, N. J.**—Construction of lateral sewer in St. George ave. is being considered.

**Buffalo, N. Y.**—Common Council has authorized construction of 15-in. sewers in various parts of city.

**Kingston, N. Y.**—City Engineer has been directed to prepare ordinance for sewer on Newkirk ave., between Delaware and Maple sts.

**Mamaroneck, N. Y.**—Bonds in sum of \$20,000 for sewer improvements have been sold.

**Rochester, N. Y.**—Engineer Sidney Alling, who is acting as consulting engineer for Ripton Murphy, contractors, has completed plans for carrying of new sewer system across river by means of cofferdams. These dams will be laid outward from bank of river, and will enclose rectangular space in which sewer will be laid with use of electric hoists.

**Schenectady, N. Y.**—City has been authorized to purchase right of way for sewer purposes over land of August

Weber in Tenth Ward, which was followed by ordinance directing issuance of the city bonds. Total amount of the issue will be \$100,000.

**Syracuse, N. Y.**—Board of Estimate and Apportionment has approved the \$200,000 bond issue for completion of intercepting sewer work ordered by Common Council.

**Syracuse, N. Y.**—Common Council has authorized issue of bonds to amount of \$200,000 for completion of intercepting sewer.

**White Plains, N. Y.**—The Bronx Valley Sewer Commission reached an agreement with U. S. Government authorities whereby work of extending outlet pipe of Bronx Valley sewer into Hudson river for distance of 297 ft., which is 197 ft. beyond bulkhead line. Only stipulation is that Commission must construct screening plant at cost of \$50,000. By this plan sewerage will run into river in liquid form and will not be nuisance.

**Greensboro, N. C.**—At election held for \$130,000 bond issue for sewerage extension, street improvement, market and opera house improvement, proposition carried by safe majority.

**Dayton, O.**—Storm sewer bonds in sum of \$35,000 have been sold to Tillottson & Walcott, of Cleveland, and \$8,000 sanitary sewer bonds to Davies, Bertram & Co., Cincinnati.

**Girard, O.**—Bonds have been sold in sum of \$24,500 for sewerage of State st.

**Hamilton, O.**—City Engineer has submitted estimate of sanitary sewer and house connections on Beckett, from Front st. to Garden ave.; total, \$1,166.50.

**Niles, O.**—Resolution to construct sewers on Walnut st., from Grant to Pratt sts.; Pratt st., from Walnut st. to the Erie railroad; East Park ave., from Pine alley to Lot 241; Pine alley, its full length; Langley st., from Pine alley to Pratt st., and Railroad st., from Grant st. to Pratt st., has been passed.

**Erie, Pa.**—Ordinance has been passed providing for storm water sewer in Cranberry st. and 19th st., from Poplar st. to drain into Cascade Creek, to cost \$16,000.

**Erie, Pa.**—Resolution has been adopted to advertise for bids for sale of \$185,000 in city bonds. These include \$10,000 for temporary sewage disposal plant, and \$55,000 for conduits and storm water sewer system.

**Farrell, Pa.**—Plans for new sewer disposal plant must be submitted to State Health Department before October 1, 1912.

**McKeesport, Pa.**—City Engineer J. Munroe Smith has been instructed by Sewer Committee to proceed at once with storm sewer through Ninth Ward, connecting with Sill ave. Work on sanitary sewer will be started shortly.

**Philadelphia, Pa.**—Bids for sewer and bridge work, amounting to \$500,000, will be opened by Bureau of Surveys on Aug. 2.

**Pawtucket, R. I.**—Resolution is being considered calling for appropriation of \$1,400 for construction of sewer in Sissin st.

**Knoxville, Tenn.**—John W. Flenniken, Commissioner of Streets and Public Improvements, will present resolution to Commission to advertise for bids for construction of Third Creek sewer. J. E. Thompson, City Engineer, with his force, is preparing maps and profiles for this work, and as soon as all is completed, bids will be asked.

**Clarksville, Tex.**—Citizens are contemplating bond issue of \$25,000 for construction of sewer system.

**Dallas, Tex.**—City Commission has ordered City Secretary to advertise for bids on laying large quantity of sanitary sewer pipes, as follows: Six and 8-in. sanitary sewers to serve property between the Gulf, Colorado and Santa Fe Railway and Parry ave., east of Haskell ave. This will require approximately 4,000 ft. of 8-in. sewer pipe and 10,800 ft. of 6-in. sewer pipe, and the approximate cost will be \$6,890. About 250 houses will be served. Six-in. sanitary sewer in alley between Munger and Roseland, east of Haskell. This will require approximately 264 ft. of pipe and will cost about \$261.

**Houston, Tex.**—Bonds to amount of \$750,000 have been voted for construction of 7 miles of storm water sewers.

**Eau Claire, Wis.**—Construction of trunk sewer in Tenth Ward is being considered by City Council.

**Elkhorn, Wis.**—Construction of sewer system is under consideration.

#### CONTRACTS AWARDED.

**Waterbury, Conn.**—For installing sewers in Plaza st., Oak st. and Inman ave., to Antonio Lambo, by Board of Public

Works, at \$2,935. Bids were received from John F. Keating for \$4,158, and from John McLoughlin for \$3,850.

**Gary, Ind.**—By Board of Public Works for construction of immense sewer system which will drain southern part of city, reclaiming hundreds of acres of land bordering Calumet river, to Illinois Improvement & Ballast Co., of Chicago, for \$292,000, who submitted only bid.

**South Bend, Ind.**—By Department of Public Works, to De Poepe & Coussins, for construction of pipe sewer in Garst st.

**Sioux City, Ia.**—To D. C. Armstrong, for construction of two blocks of sewers in W. 20th and W. Sixth sts.

**Danville, Ky.**—For sewer construction in Danville, to T. F. Clark, at about \$5,000.

**Portland, Me.**—For building 1,010 ft. of sewer in Clifton and Woodford sts., to R. E. Tuttle & Co., that firm being lowest bidder, at \$391.10. Other bids as follows: Camillo Krofeno, \$616.05; T. W. Marshall, \$739.95; Murphy Bros., \$645.65; Frank Lorello, \$616.85.

**Fitchburg, Mass.**—By Board of Sewage Disposal Commissioners, for construction of Section 4, in main intercepting sewer, to Bruno & Pettiti, 18 Tremont st., Boston, at \$28,546. Other bids as follows: International Construction Co., Boston, \$32,591; C. M. Trumbull Co., Boston, \$35,550; McCarthy & Walsh, East Boston, \$38,268; George Phillips, Waltham, \$41,254; Joseph Song & Co., Leominster, \$46,658; John Falvey, East Lexington, \$49,025.

**Duluth, Minn.**—By Council to C. R. McLean, for construction of storm sewer in Railroad alley, with outlet in bay. The price is \$1,065.

**Morris, Minn.**—By Common Council, to Wm. H. Bosworth, Ada, Minn., for construction of sewer.

**Kansas City, Mo.**—By Board of Public Works, for construction of sewers, as follows: Johnson Real Estate & Construction Co., 343 New York Life Bldg., \$11,756.20; Fred. Lorimer, \$3,594.40; F. P. McCormick, Southwest blvd. and Penn st., \$5,465.50.

**St. Louis, Mo.**—By Board of Public Improvements for construction of North Harlem Sewer District No. 1, to John F. McMahon, Wainwright Building, St. Louis, at \$187,096.

**Trenton, N. J.**—For construction of sewers 32, 77 and 104, to John Tott, Antonio De Lucia and Gibbs & Morgan, respectively.

**Westfield, N. J.**—By Town Council, for sewers in several streets, to Louis Jaques, for \$2,294.10.

**Auburn, N. Y.**—For construction of sewers in Lake ave., and Swift st., to J. D. Tuller, at \$5,072.

**Newburgh, N. Y.**—Contracts for construction of five sewers all to be completed by September 1, have been awarded by City Council. One of contracts that for sewer in north side of Broadway, from Robinson ave. west about 200 ft., went to Michael R. Spino for \$328.98; other bidders, Jova & Kehoe, asking \$396.59. Four remaining contracts were awarded to Jova & Kehoe. Bids were as follows: Sewer in north side of Broadway, from Robinson ave. east to Concord st., Jova & Kehoe, \$985.91; Michael R. Spino, \$1,123.72. Sewer in Grove st., between West Van Ness st. and the Cocheton turnpike, Jova & Kehoe, \$543.55; Michael R. Spino, \$623.50. Sewer in Grove st., between Orchard and West Van Ness st., and in West Van Ness st. east from Grove st., to the West st. sewer, Jova & Kehoe, \$1,807.02; Michael R. Spino, \$2,339.24. Sewer in south side of Broadway, from Lake to West st., Jova & Kehoe, \$2,889.50; Michael R. Spino, \$4,022.

**Saranac Lake, N. Y.**—For constructing about 32,000 ft. of 6 to 15-in. vitrified pipe sewers, to Ralph F. Rely, 311 East Fifth st., New York.

**Syracuse, N. Y.**—For sewer in Maryland and Westminster aves., Philip Thomas was lowest bidder at \$2,021.75. Other bids were: Albert Gaffney, \$2,226.50; Anthony Sposato, \$2,251; F. S. Sposato, \$2,383.25; Charles Brown, \$2,375. Engineer's estimate on work was \$2,950.

**Columbus, O.**—For Milo sewer extension and Long st. sewer, as follows: J. C. Beasley, at \$30,000, and J. F. Ryerson, at \$7,000, respectively.

**Reading, Pa.**—By Board of Public Works, for building storm water sewers, one at Second st. and Lebanon Valley Railroad and other on Oley st., from Locust to Thirteenth sts., to Rundle & Rehr, at \$897.32 and \$3,948.40, respectively.

**Providence, R. I.**—To M. A. Gamino, of

this city, by State Board of Control and Supply for construction of sewerage system and extension of water mains at Rhode Island School for Feeble Minded at Exeter. Mr. Gamino was lowest of four bidders, his figure being \$5,588.

**Yankton, S. Dak.**—To Goetz Construction Co., for construction of lateral sewer.

**Toppenish, Wash.**—For construction of five lateral sewers, to Alpin & Taylor, Toppenish, at \$12,500.

**Madison, Wis.**—For new sewage disposal plant, to John T. Blake, at about \$180,000.

#### BIDS RECEIVED.

**Fairhaven, Mass.**—Sewer Commissioners of Fairhaven have opened bids for construction of sewers in several streets in town, and proposals from 10 contractors were read as follows: Z. W. Dodge, Fairhaven—Outlet near Coggeshall st. bridge, \$2,300; 18-in. vitrified pipe sewer in Howland rd., no price; 8-in. pipe sewer in Howland rd., \$1.34 per lin. ft.; extra excavation and refill to sub-grade, \$3.50 per cu. yd., or cost and 15 per cent.; manhole complete, \$37 each; rock excavation, \$5 per cu. yd., or cost and 15 per cent. North End system, oak st. sewer and branches complete, 79 cts. per lin. ft.; manholes \$24 each; rock excavation, \$3.50 per cu. yd., or cost and 15 per cent. Garrison st. sewer, 74 cts. per lin. ft., manholes \$24 each, rock excavation same as above. Oxford sewer extension, 10-in. pipe sewer in Main st., \$1.12 per lin. ft.; 8-in. pipe sewer, 77 cts. per lin. ft. Ball st. sewer, 99 cts. per lin. ft.; lampholes, \$8 each. Wood st. sewer, 99 cts. per lin. ft.; handholes, \$5; rock excavation, same as above. South end sewer extension, 12-in. sewer in Green st., 74 cts. a lin. ft.; sewer in contemplated street across Allen land in South Chestnut st. and Church st., \$1.13½ a lin. ft. South Pleasant st. sewer, 74 cts. a lin. ft. Bay State Engineering Co., New Bedford—Coggeshall st. sewer outlet, \$2,300. Howland rd., 18-in., \$1.52 per ft. Howland rd., 8-in., 93½ cts. per ft.; extra excavation, 68½ cts. per cu. yd.; manhole complete, \$21 each. Oak st. sewer, 65 cts. per ft.; manholes, \$15; rock excavation, cost and 15 per cent. Garrison st. sewer, 65 cts. per ft.; manholes, \$15. Main st. sewer, 10-in., \$1.05 per ft. Main st. sewer, 8-in., 80 cts. per ft.; manholes, including drop manhole, \$18.12; rock and extra excavation, same as Oak st. sewer. Ball st. sewer, 65 cts. per ft.; lamphole, \$1. Wood st. sewer, 83 cts. per ft.; lamphole, \$1; Green st., 12-in., 90 cts. per ft. Three new streets, \$1 per ft. South Pleasant st., 70 cts. per ft.; manholes complete, \$18. Loftus, Dugan & Gillies—Outlet, \$2,607; Howland rd. sewer, 18-in., \$1.21 per ft.; Howland rd., 8-in., 74 cts. per ft.; extra excavation, 82 cts. per cu. yd.; manholes complete, each, \$18.50; rock excavation, \$5 per cu. yd. Oak st. sewer, 94 cts. per ft.; manholes, \$18.50 each. Garrison st. sewer, no price. Main st., 10-in. pipe sewer, 82 cts. per ft.; 8-in. sewer, 63 cts. per ft.; manholes, each, \$18.50; rock and extra excavation same price as above. Wood st. sewer, 65 cts. a foot; lamphole, \$21. Green st. sewer, 65 cts. a foot. Three new streets, 71 cts. a ft. South Pleasant st., 62 cts. a ft. South Chestnut st., 71 cts. a ft., manholes, \$18.50. Thomas Bruno, Boston—Outlet, \$4,000; Howland rd., 18-in. sewer, \$2 per ft.; 8-in., \$1 per ft.; extra excavation, \$1 per yd.; manholes, complete, each, \$25; rock excavation, \$4.50 per yd. Oak st. sewer, \$1.25 per ft.; manholes, each, \$25; rock and extra excavation, same as above. Garrison st. sewer, \$1 per ft.; manholes and rock excavation same as above. Main st. sewer, 10-in. pipe, \$1.25 per ft., 8-in. sewer, \$1 per ft.; manholes, rock and extra excavation, same prices as above. Ball st. sewer, \$1 per ft., lampholes, \$5. Wood st. sewer, prices same as Ball st. Green st. sewer extension, \$1.25 per ft. Three new streets \$1.25 per ft. South Pleasant st., \$1 per ft. South Chestnut st., \$1 per ft. Fred W. Stowers, Methuen—Outlet, \$4,000, all sewers, \$1 per ft., manholes \$1 each complete, rock excavation \$5 per cu. yd.; lampholes, \$1 each. Brigham & Mogavvers, Boston—Outlet, \$2,950; 18-in. sewer in Howland rd., 55 cts. per ft., 8-in. sewer in Howland rd., 48 cts. a ft.; extra excavation, 60 cts. a yd.; manholes complete, \$8; rock excavation, \$4 a cu. yd. Oak st. sewer, 54 cts. a ft. Garrison st. sewer, 45 cts. a ft. Main st., 10-in. sewer, 55 cts. a ft. Main st., 8-in. sewer, 46 cts. a ft. All manholes \$8, lampholes \$5. Ball st. sewer, 45 cts. a ft. Wood st. sewer, 50 cts. a ft. Green st. sewer, 49



cts. a ft. Three new streets, 52 cts. a ft. South Pleasant st., 45 cts. a ft. South Chestnut st., 50 cts. a ft. Cook & McQuade, New Bedford—Outlet, \$3,700; Howland rd., 18-in. sewer, \$1.05; 8-in. sewer, 80 cts. a ft., extra excavation, \$1 a yd.; manholes, complete, each, \$15.50; rock excavation, \$7.50 per cu. yd. Oak st. sewer, 80 cts. a ft. Main st., 12-in., 80 cts. a ft. Main st., 8-in., 80 cts. a ft. Manhole and drop, \$13. Ball st. sewer, 70 cts. a ft.; lamphole, \$5. Wood st., same prices as Ball st. Green st., 75 cts. a ft.; three new streets, 70 cts. a ft. South Chestnut st., 70 cts. a ft., manhole complete \$12; rock excavation, \$7.50 a cu. yd. Carmin Russo, Boston—Outlet, \$2,400; 18-in. sewer in Howland rd., 90 cts. a ft.; 8-in. sewer in Howland rd., 80 cts., extra excavation, \$1 per yd.; manholes, \$28; rock excavation, \$5 a yd. Oak st. sewer, 85 cts. per ft. Garrison st. sewer, 80 cts. per ft. Main st., 10-in. sewer, 80 cts. per ft. Main st., 8-in. sewer, 70 cts. per ft.; manhole and drop, complete, \$26. Call st. sewer, 70 cts. a ft.; lamphole, \$4. Wood st. sewer, 75 cts. a ft.; lamphole, \$4; rock excavation, \$5 per cu. yd. Green st. sewer, 75 cts. per ft. Three new streets, 80 cts. per ft. South Chestnut st., 80 cts. per ft. C. E. Trumbull Co., Boston—Outlet, \$4,000 18-in. pipe sewer in Howland rd., \$1.50 per ft.; 8-in. pipe sewer, Howland rd. 73 cts. per ft.; extra excavation, \$2 a cu. yard; manholes, each, \$10; rock excavation, \$4 a cu. yd. Oak st. sewer, 73 cts. per ft.; Garrison st. sewer, 73 cts. per ft. Main st., 10-in. sewer, \$1.10 per ft. Main st., 8-in. sewer, 70 cts. per ft.; manholes, including drop, \$12. Ball st. sewer, 70 cts. per ft.; lampholes, \$7 each. Wood st. sewer, 70 cts. per ft.; lampholes, \$7. Green st. sewer, 90 cts. per ft. Three new streets, 90 cts. per ft. South Pleasant st., 70 cts. per ft. South Chestnut st., 90 cts. per ft.

### WATER SUPPLY

**Berryville, Ark.**—Plans are being prepared for \$20,000 water works system by Engineer W. H. Schreiber, of Springfield, Mo.

**Monrovia, Cal.**—Committee has been appointed to prepare specifications, choose location and advertise for bids for well to be sunk on Arroyo lands belonging to city.

**Pasadena, Cal.**—Water bonds in sum of \$1,250,000 will be sold. City Clerk will receive bids up to August 27.

**Redlands, Cal.**—Redlands City Trustees have taken steps to sell \$600,000 water bonds, setting date of bonds November 15 instead of January 2, 1913, as first planned. It is desired that bonds be sold and money available for either purchase of water systems now in operation or putting down wells.

**Riverside, Cal.**—Municipal water system for Riverside seems assured through approval by City Council of contract for purchase of domestic system of Riverside Water Co. and indorsement of this

contract by Commission from directorate of water company.

**Tulare, Cal.**—San Francisco engineers have completed map showing proposed municipal water system will cost city about \$100,000. Mains will serve every residence and business house. At bond election, voters will be given two alternatives—purchase of present privately owned system, at \$40,000 and addition of necessary mains, or construction of new system to cost \$100,000.

**Waterbury, Conn.**—It has been voted to request City Engineer to submit estimate of expense of installing water main on Ledgeside ave., from Highland ave. to property known as No. 184, on same st.

**Macon, Ga.**—About 1,000 water meters will be supplied to new consumers.

**Wrens, Ga.**—J. B. McCrary Co., Atlanta, Ga., is preparing plans for water system to cost \$12,000.

**Ashton, Ill.**—Election is being considered for voting of new water works system.

**La Salle, Ill.**—Plans are being considered for water supply.

**Moline, Ill.**—Plans are being prepared by Engineer Dabney H. Maury for improving water works system.

**Logansport, Ind.**—Plans are in progress for installation of filtration plant.

**South Bend, Ind.**—Council is considering \$50,000 worth of waterworks improvements.

**South Bend, Ind.**—Pumping station will be erected shortly in East End.

**Gilman, Ia.**—Bond issue of \$12,000 has been voted for construction of water works.

**Horton, Kan.**—Bonds in sum of \$3,800 have been authorized for improvements to water works; also construction of reservoir.

**Taunton, Mass.**—Committee on Finance has reported order authorizing loan of \$15,000 for water works construction, to include Winthrop st. extension beyond Westville; Walker st. extension to connect Westville and North Dighton dead ends and other smaller extensions that Commissioners might see fit to make.

**Wilbraham, Mass.**—Estimates have been secured as to cost of supplying water from Springfield to this city, distance of 10 miles.

**Detroit, Mich.**—Water Commissioner Gillespie estimates that \$7,000,000 is required for building up water systems of city.

**Kalamazoo, Mich.**—Election will be held July 29 for voting on \$40,000 bond issue for purpose of extending water works system and laying water mains in public streets, highways and avenues. Clarence L. Miller, City Clerk.

**Traverse City, Mich.**—Erection of plant to purify city water is being considered.

**Kittsville, Minn.**—Election will be held Aug. 15, for voting on water works improvements.

**Madison, Minn.**—Bids will be received for purchase of \$50,000 bonds by Common Council until 8 p.m., July 30, for

construction of municipal water works. James H. Hayden, City Recorder.

**Hannibal, Mo.**—Extension of water mains has been recommended.

**Dover, N. J.**—Acting upon suggestion made by Common Council at meeting of July 8 that Board of Water Commissioners advertise for bids on duplicate pumping plant required in connection with town's water supply system, Board of Water Commissioners has decided to comply. It was decided to have all bidders bid on same thing, that is, each bidder must state cost per 1,000 gals. to place water in both reservoirs.

**Jersey City, N. J.**—Mayor Wittpenn has forwarded to Board of Finance letter from Chief Engineer Van Keuren, of Street and Water Board, telling of need of duplicate water pipe line from Boonton to Jersey City. Mr. Van Keuren estimates cost of pipe line at \$1,600,000.

**South Orange, N. J.**—South Orange Board of Trustees has authorized Water Committee to spend \$10,000 for purposes of village water plant. Bids were received for erection of pumping station and for laying of water mains from pumping station to reservoir. These were referred to Water Committee, with power to award contract to lowest responsible bidder.

**Trenton, N. J.**—State Water Supply Commission has retained William B. Bernshouse, of Hammon, and Freeman Bros. and Marcus Carroll, of Camden, to appraise Wharton tract in Atlantic and Burlington Counties, purchase of which is contemplated by State to provide water supply for number of municipalities in South Jersey.

**Woodbury, N. J.**—Council has decided to advertise for bids for boring two 8-in. wells on Grisco farm as further experiment in securing new water supply.

**Newburgh, N. Y.**—Preparations are being made for special election which is to be held on July 31, for purpose of ascertaining desires of taxpayers in matter of request for authority to sell \$50,000 worth of bonds for water improvements.

**North Hempstead, L. I., N. Y.**—Bond issue of \$14,000 has been approved for laying of water mains in East Williston.

**Mitchell, N. Dak.**—At meeting of City Council it decided to expend about \$3,000 for establishment of additional water facilities by putting down fifth artesian well, beginning with 12-in. and finishing with 10-in. well.

**Akron, O.**—Motor-driven centrifugal pump may be installed.

**Dayton, O.**—State Board has approved of plans for improving water system.

**East Youngstown, O.**—Plans have been adopted for sinking of artesian well.

**Ravenna, O.**—Bonds for \$7,000 have been voted for extension of water system.

**New Philadelphia, O.**—Plans have been prepared by City Engineer Arnold for improvements to pumping station, and construction of water works building.

**Youngstown, O.**—Ordinance has been

**Newark, N. J.**—The following bids were received for storm water sewers in the Vailsburg district:

Middle Division, Sect. 1.														
Quantities		Total	8' x 20' Con. Sewer Open Channel.	28' x 20' Con. Sewer Slab Construction	7' x 12' Concrete Sewer.	18" Vitrified Pipe.	18" Cast Iron Pipe.	2 Manholes Over Concrete Sewer.	2 Manholes Over Pipe Sewer.	1 Basins with Concrete Heads.	M. B. M. Foundation Timber.	Cu. Yds. Broken Stone.	Cu. Yds. Extra Concrete.	Cwt. Extra Steel.
O'Gara & Maguire..	\$81,790.90	\$15.87	2730	\$15.87	\$18.44	\$2.00	\$3.50	\$30.00	\$40.00	\$75.00	\$35.00	\$2.25	\$8.00	\$3.00
Chas. Ippolito .....	94,288.60	18.14		19.28	21.77	2.00	3.00	40.00	40.00	100.00	32.00	2.00	8.00	4.00
Harrison Con. Co..	127,764.50	25.75		25.75	28.15	2.00	2.75	25.00	50.00	120.00	40.00	2.50	10.00	4.00
W. J. McCloud & Co.	97,116.80	19.62		19.12	21.51	1.75	5.00	35.00	50.00	95.00	40.00	3.00	8.00	5.00
J. W. Heller.....	86,754.90	15.73		17.80	21.00	2.50	4.50	30.00	45.00	70.00	40.00	2.50	10.00	4.00

Middle Division, Sect. 2.													
Quantities		Total	5' 6" x 8' 0" Concrete Sewer.	5' 6" x 6' 9" Concrete Sewer.	18" Vitrified Pipe.	15" Vitrified Pipe.	Manholes Over Concrete Sewer.	Manholes Over Pipe Sewer.	Basins with Concrete Heads.	M. B. M. Foundation Timber.	Cu. Yds. Broken Stone.	Cu. Yds. Extra Concrete.	Cwt. Extra Steel.
O'Gara & Maguire..	\$55,270.10	\$14.90	2330	\$10.87	\$1.00	\$0.87	\$30.00	\$40.00	\$55.00	\$35.00	\$2.25	\$8.00	\$3.00
Chas. Ippolito .....	6,243.40	17.45		12.43	1.25	1.00	35.00	40.00	100.00	32.00	2.00	8.00	4.00
Harrison Con. Co..	75,246.50	20.05		15.00	2.00	2.00	30.00	50.00	100.00	40.00	2.50	10.00	4.00
W. J. McCloud & Co.	59,543.30	15.47		11.74	1.50	1.50	35.00	50.00	95.00	40.00	3.00	8.00	5.00
J. W. Heller.....	65,286.10	17.50		12.37	2.30	2.00	40.00	40.00	60.00	40.00	2.50	10.00	4.00
D'Amato & Stefanelli	69,269.50	18.50		13.85	1.50	1.55	30.00	47.00	80.00	40.00	3.00	9.00	3.00

passed providing for issuance of bonds for extension of water works system. M. F. Hyland, Clerk.

**Hazleton, Pa.**—Extension of water mains to Seventh st. is being considered.

**Johnstown, Pa.**—About 1,000 water meters will be installed.

**Philadelphia, Pa.**—Sum of \$225,000 is to be used for extension of high pressure mains for fire fighting. Contract will shortly be let.

**Pittsburgh, Pa.**—Bids will be advertised for laying of 3,025 ft. of water main on Second ave.

**Corpus Christi, Tex.**—City Council is considering measures looking to relief of water situation. On motion of Mr. Miller, Council unanimously adopted report of Acting Engineer Philbrick, for construction of concrete reservoir on standpipe lot. Water Works Commission was authorized to order necessary materials and execute work at earliest possible date. Briefly, report of Engineer Philbrick is for construction of a reinforced concrete reservoir, 40 ft. in diameter and 15 ft. deep, with partition wall for settling basin, with capacity of 141,000 gallons of water. It is estimated that this reservoir can be constructed at approximate cost of \$1,700.

**North Fort Worth, Tex.**—Proposition of digging another well on north side has been referred to Finance and Water Works Committees. John F. Grant, Commissioner of Lights on north side, said that they are asking for 10-in. 1,200 ft. well. He does not think well will be drilled before early fall.

**Milton, W. Va.**—Citizens have voted in favor of \$10,500 bond issue for construction of water works system. Bids will shortly be asked.

**Hillyard, Wash.**—At regular meeting of Hillyard City Council, City Engineer R. E. Brown was instructed to make blue print of entire water works system of all property within city limits, showing where new fire hydrants are necessary. He will also make estimate of cost of removing of all wooden pipe and cost of different kinds of metal pipe.

**Rowlesburg, W. Va.**—Bonds for \$11,000 have been voted for installation of water system.

**Iron River, Wis.**—Town is contemplating improvements to water system, to cost about \$15,000.

**Milwaukee, Wis.**—Water Department is preparing plans for laying 17,000 ft. of 36-in. main in northern part of city. Cost, about \$171,000.

#### CONTRACTS AWARDED

**San Francisco, Cal.**—To lay water mains in district bounded by Market, Eleventh, Division, Berry and Kansas sts., to Contra Costa Construction Co., at \$159,167.

**Colorado Springs, Col.**—To construct dam at Reservoir No. 2, to Ord & Swope, at \$17,000.

**DeBeque, Col.**—To install water system, to J. J. Lumsden, Grand Junction, Col. The system is estimated to cost \$20,000.

**Washington, D. C.**—To furnish 2,745 tons of c-i. water pipe, to the Camden Iron Works, Philadelphia.

**Burley, Idaho.**—To construct water system here, to W. C. Dickey, Jr., Burley, at \$34,106.

**Coffeyville, Kan.**—For constructing water system as follows: Constructing filtration plant and settling basins, to F. W. Yale, Coffeyville, at \$33,606; laying pipe lines, to McGuire & Stanton, Coffeyville, at \$14,355. Bids were opened July 9. Worley & Black, Reliance Building, Kansas City, Mo., are consulting engineers.

**Independence, Kan.**—To furnish 4,000,000-gallon cross compound crank and fly-wheel pumping engine of opposed type, to Allis-Chalmers Co., Milwaukee, Wis., at \$14,000. The other bids were H. N. Straight Co., Kansas City, Mo., \$13,600 (not in conformity with specifications); E. J. Merkle & Co. (Platt Iron Works), Kansas City, Mo., \$14,267; Snow Steam Pump Co., Buffalo, N. Y., \$14,710; Epping-Carpenter, Pittsburgh, Pa., \$15,200.

**Grand Haven, Mich.**—To furnish hydrants for water system, to Kennedy Valve Manufacturing Co., Western Union Building, Chicago, Ill., at \$21.75 each, and to furnish gates, to J. J. Howden Co., Muskegon, Mich.

**Fulton, Mo.**—To install water system at State Hospital No. 1, to Thomas Peters, Chemical Building, St. Louis, Mo., at \$25,000.

**Mitchell, N. Dak.**—Bids have been opened at Ethan for construction of a water system and contract was awarded to F. Bance, of Yankton. Total to be ex-

ceeded on installation of new water works will be \$8,700.

**Wahpeton, N. Dak.**—For reinforced concrete, two chamber, 600,000 gallons, to Hopeman Construction Co., of Moorhead.

**Philadelphia, Pa.**—Contracts have been awarded for extension of filtration system in West Philadelphia, by enlargement of pre-filter beds and laying of additional supply main to George's Hill reservoir, from Belmont filtration plant, which will result in maintenance of greater pressure in distributing mains in wards west of Schuylkill river. Walter Wood was successful bidder for cast iron pipes and special castings, his contract amounting to \$112,950. John McMenamy will make excavations and lay pipes for \$105,225, and Kennedy Valve Manufacturing Co. will supply special valves for \$3,304. Another award was for supply of "cut-off" for main pipes from Shawmont plant, to Water Works Engineering Co., for \$1,500. When new improvement for West Philadelphia's water supply is completed, huge meters will be installed so as to adequately measure water supplied from George's Hill reservoir. New boilers are to be installed at Queen Lane pumping station, to cost \$45,000, and it is planned to have employees of Water Bureau install these boilers. Purchases have not yet been made. Pump in same station is to be rebuilt, for which \$40,000 is provided. Plants for treatment of water with hypochlorite of lime are also to be installed throughout city as an emergency. Total of \$415,000 will be expended out of \$4,225,000 loan for water system improvement.

**Kenosha, Wis.**—To construct reinforced concrete settling well, 30 ft. in diameter, to Charles Payne, Waukegan, Ill., at \$6,569.

#### LIGHTING AND POWER

**Gravette, Ark.**—Plans are being prepared by Nagel & Peterson, Muskogee, Okla., for the construction of municipal electric light plant.

**Grimes, Cal.**—There is to be election held on question of establishing system of street lights in that town.

**Los Altos, Cal.**—Election has been held at this place to decide upon question of establishing lighting district. Question carried by almost unanimous vote.

**San Jose, Cal.**—At meeting of Market Street Improvement Club, Light Committee was authorized to sign contract for placing of 500 lights on north side of city hall.

**New London, Conn.**—Extension of street lighting system has been planned.

**Rochele, Ga.**—Citizens are contemplating construction of electric light plant.

**Rome, Ga.**—The "White Way" to be installed here, will extend from Second to Fifth aves., and lamps will be placed every 60 ft. on both sides of street.

**Waycross, Ga.**—Gas franchise has been granted to George W. Deern, of this city, and L. M. Aldrich, of New York, for period of 33 years.

**Columbus, Ind.**—City Council has practically agreed to grant 25-year franchise to Inter-State Electric Co. for light, heat and power.

**Carlisle, Ia.**—Special election will be called for voting on electric lighting of town.

**Davis City, Ia.**—Franchise has been granted to Herald Publishing Co., of Lamoni, to construct and operate electric light plant.

**Pomeroy, Ia.**—Citizens are considering construction of municipal electric light plant.

**Fort Madison, Ia.**—Installation of ornamental street lighting system in business district is being discussed.

**Topeka, Kan.**—City Engineer has presented specifications for special illumination of East Fourth st., from Kansas ave. to Holliday st., and on motion of Commissioner Miller, they have been approved.

**Corydon, Ky.**—City will hold election in September to vote on proposition to issue bonds of \$10,000 for construction of municipal electric light plant.

**Whitley, Ky.**—Construction of electric light plant and water works system is being discussed.

**Princeton, Mass.**—Appropriation of \$15,000 has been voted for construction of a municipal electric light plant.

**Ypsilanti, Mich.**—City Council is planning construction of municipal gas plant.

**Cicero, N. Y.**—Plans are being made by J. J. Auburn for construction of electric light plant to supply electricity for commercial and lighting purposes.

**Eden Valley, Minn.**—Lethbert Electric

Co., of St. Paul, has been granted electric light franchise.

**Hibbing, Minn.**—Installation of White Way on Pine st., from First to Third ave., is being discussed.

**Butte, Mont.**—Plans have been prepared for installation of ornamental street lighting system in business district. Estimated cost, \$37,175.

**Helena, Mont.**—Plans are being prepared for installation of ornamental lighting system for business district.

**Camden, N. J.**—City Council has awarded contract for drawing of plans for municipal light plant, to Runyon & Carey, at \$1,000.

**Newark, N. J.**—Board of Works has adopted motion to renew general contract with Public Service Electric Co. for lighting city streets from September 1, 1912, to September 1, 1913.

**Rahway, N. J.**—Installation of municipal electric light plant in connection with water works is being considered.

**Red Bank, N. J.**—Petitions for more incandescent lights in Hudson ave., between Branch ave. and Bergen pl., and in Marion st., between Worthley st. and Harrison ave., have been received.

**Johnstown, N. Y.**—Question of street lighting is being discussed.

**Johnstown, N. Y.**—Citizens are considering municipal lighting plant.

**Oswego, N. Y.**—System of ornamental lighting will probably be installed in business section of city.

**Portvue, N. Y.**—Town Council is contemplating installation of ornamental street lighting system.

**Scotland Neck, N. C.**—Improvements will be made to electric lighting system.

**Mitchell, N. Dak.**—City Council has decided to install 46 cluster lights on Main st.

**Altus, Okla.**—Election will immediately be called by Mayor, putting up to the people question of whether or not they want to dispose of electric light plant to private parties and relieve city of further responsibility for it.

**Eugene, Ore.**—Council has agreed to pay Water Board \$552.60 monthly for street lights.

**Lebanon, Pa.**—Specifications have been prepared for street lighting contract.

**Pine Grove, Pa.**—Franchise has been granted by Borough Council to F. X. Troxell Electric Light Co. to construct and operate electric light plant.

**Mitchell, S. D.**—City Counsel has decided to install cluster electric lights in Main st.

**Fredericksburg, Va.**—City Council has entered into contract with Fredericksburg Power Co. for furnishing streets of city with electricity and for pumping water to city reservoir with electric power.

**Wellsburg, W. Va.**—Contract has been renewed between City and Wellsburg Electric Light, Heat and Power Co., for five years.

**New Holstein, Wis.**—Construction of electric light plant is being considered. Bonds have recently been voted.

#### CONTRACTS AWARDED

**San Francisco, Cal.**—By Board of Public Works, for installation of electric time system in San Francisco Hospital, to Butte Engineering & Electric Co., San Francisco, at about \$15,000.

**San Leandro, Cal.**—Board of Town Trustees have signed contract with Pacific Gas and Electric Co., for electric power for street lighting purposes in this city for a period of five years. Terms call for sliding scale of rates slightly lower than rates existing heretofore.

**Springfield, Ill.**—By City for 300 of standards to be used in connection with park and boulevard system, to Pettyjohn Co., of Terre Haute, Ind.

**Fort Howard, Md.**—For boilers for power plant and sinking 19-in. tubular well, as follows: Herbert F. S. Allen, Washington, D. C., at \$12,500; Edward Christman, Massillon, O., at \$8,500, respectively.

**Southbridge, Mass.**—To Webster & Southbridge Gas & Electric Co. for construction of gas plant, to Farnham & Davis Co., Boston, Mass. Plant will have capacity of 100,000 cu. ft.

#### FIRE EQUIPMENT

**Alameda, Cal.**—Motor truck will probably be purchased.

**Fresno, Cal.**—Purchase of motor fire apparatus is being considered.

**Los Angeles, Cal.**—For ensuing year Fire Chief Eley recommends establishment of fire houses at Hollywood, First and Reno sts., Central ave. and 14th st., Slauson and Figueroa, Vermont ave. and Hollywood blvd., Pasadena avenue and



Ave. 40, Crescent ave. and Ave. 64, near Adams and Santa Monica ave., and Pasadena ave. and Ave. 26, and that the engine company at Pasadena ave. and Ave. 19 be removed to the corner of Ave. 26 and Pasadena ave. He also recommends purchase of modern fireboat with minimum capacity of 9,000 gals. per minute for use at San Pedro, purchase of 16,000 additional ft. of 2½-in. hose, and installation of additional twin hydrants with 4-in. openings in congested portions of city. Purchase of 550 alarm boxes and installation of a manual fire alarm system at new station, Seventh and Figueroa sts., is also recommended.

**Modesto, Cal.**—Purchase of motor combination chemical and hose wagon has been authorized.

**San Francisco, Cal.**—Fire protection bonds in sum of \$600,000 have been sold.

**Denver, Col.**—New central fire station will be erected to cost \$16,000. Plans are being prepared.

**Washington, D. C.**—Horsedrawn equipment will probably soon be replaced with motor trucks.

**Chicago Heights, Ill.**—Purchase of motor combination hose wagon, tractor for ladder truck and 500 ft. of 3-in. hose has been recommended.

**Decatur, Ill.**—Purchase of motor truck for proposed new fire station is being discussed.

**Kankakee, Ill.**—Bids will be asked by Purchasing Committee for motor chassis for Westfield chemical wagon.

**Urbana, Ill.**—Purchase of motor combination ladder, chemical and hose truck is being considered; cost, about \$6,000.

**Grinnell, Ia.**—Purchase of motor apparatus is being considered.

**Chelsea, Mass.**—About 2,000 ft. of new fire hose will likely be purchased.

**Lowell, Mass.**—Three motor chemical trucks will be purchased.

**Lynn, Mass.**—The \$24,500 and \$400 bond orders for purchase of automobile equipment for Police and Fire Departments have been adopted. Approximate price for each piece of apparatus is: Webb pumping engine, \$8,400; police ambulance and patrol, Knox make, \$3,700; Seagraves combination hose and chemical, \$5,175; Knox combination hose and chemical, \$5,700; Pope-Hartford chemical, \$5,500. Total, \$28,475.

**Taunton, Mass.**—Committee has voted to recommend purchase of motor-driven fire engine.

**Willmamssett, Mass.**—Recommendation of appropriation of \$600 for automobile for Chief of Fire Department has been decided upon at meeting of Fire and Ordinance Committees.

**Moss Point, Mich.**—Bids are asked for fire engine, three hose carts and 1,500 ft. of 2½-in. fire hose.

**Mt. Clemens, Mich.**—New engine and ladder truck will probably be purchased.

**Minneapolis, Minn.**—Purchase of motor trucks is being discussed.

**Clarksdale, Miss.**—Purchase of combination chemical and hose wagon is contemplated.

**Hannibal, Mo.**—Purchase of motor equipment, consisting of combination pumping engine and hose wagon, combination hose wagon and tractor for ladder truck has been recommended as well as additional hose.

**Manchester, N. H.**—Resolution recommending to Common Council appropriation of \$6,000 for combination auto ladder truck and chemical has been passed under suspension of rules. This truck is intended for new West Side engine house and cost is not to exceed \$6,000.

**Atlantic City, N. J.**—Bids are being asked for fire station to be erected on Ventnor ave.

**Montclair, N. J.**—Fire Department will shortly be equipped with latest devices for life-saving. These will include life nets, scaling ladders, etc.

**Red Bank, N. J.**—Fire Chief Louis J. Tetley has made requisition for 500 ft. of hose, rubber coats, boots and other firemen's supplies for Relief, Union, Hook and Ladder and Liberty companies, and it was referred to Fire Committee with power to advertise for bids.

**Albany, N. Y.**—Purchase of number of motor trucks is being considered by Fire Chief.

**Brooklyn, N. Y.**—Borough will have before end of 1912 fifteen new fire engine houses and new fire alarm system.

**Mamaroneck, N. Y.**—Bonds in sum of \$12,500 for fire house have been sold.

**Nyack, N. Y.**—About 1,000 ft. of fire hose will probably be purchased.

**Utica, N. Y.**—Bond issue of \$12,000 is recommended to Common Council for purchase of automobile apparatus for fire and police departments.

**Yonkers, N. Y.**—Bids are being received

for chief's auto, one motor police patrol wagon and two autos for assistant chiefs.

**Raleigh, N. C.**—Board of Aldermen has adopted finally report of fire committee authorizing purchase of modern apparatus as follows: Three combination chemical and hose motor wagons, \$16,500; 1 motor car for chief, \$1,500; 1 turret nozzle, \$500; 20 fire alarm boxes, \$4,000; 3,000 ft. 2½-in. hose, \$3,000; 600 ft. rubber hose for chemicals, \$600; coats, boots and helmets, \$175; beds and bedding, \$400; new house for No. 2 company, \$3,000; new house for No. 3 company, \$3,000; repairs to house for No. 1 company, \$1,500; life net, \$100; total, \$34,275.

**Dayton, O.**—Fire Department equipment bonds in sum of \$25,000 have been sold to Breed & Harrison, of Cincinnati.

**Steubenville, O.**—Purchase of motor triple combination chemical and hose truck has been authorized by City Council, to cost about \$8,500.

**Trenton, O.**—Purchase of motor fire truck is being considered.

**Denison, Tex.**—City Council is considering purchase of auto fire engine.

**Erie, Pa.**—Resolution has been adopted to advertise for bids for sale of \$3,500 bonds for hook and ladder truck for South Erie.

**New Castle, Pa.**—Architect has been employed to draw plans for new fire station on Arlington ave.

**Pittsburgh, Pa.**—More fire apparatus is needed.

**Scranton, Pa.**—Appropriation of \$10,000 for purchase of site and construction of fire station and its equipment has been made for Twenty-first Ward in bond issue of \$150,000. It is expected that bids for fire station will follow as soon as site is purchased.

**Cranston, R. I.**—A scheme which will probably result in consolidation of fire alarm system in different parts of Cranston into one system, is under way and is understood to have received commendation of City Council Committee on Fire Department.

**Milwaukee, Wis.**—Transformation of Milwaukee Fire Department from horse-drawn equipment to motor apparatus will begin on October 1, when new motor truck will be placed in engine house at Sixth and Clybourn sts.

#### CONTRACT AWARDED

**Los Angeles, Cal.**—By Council for two motor-driven combination pumping engines and hose wagons to Gorham Fire Apparatus Co., at about \$10,000 each.

**New Britain, Conn.**—By Board of Public safety, for two combination chemical and hose motor-driven fire trucks, to Seagrave Co., of Columbus, O.

**Richwood, O.**—To American-La France Co., of Elmira, N. Y., for furnishing motor fire engine for \$7,500, allowing \$500 for old steam engine now in use. Victor Motor Fire Apparatus Co., of Buffalo, bid \$6,750.

**Youngstown, O.**—Contracts have been approved for changing entire fire department from horse power to gasoline power. Contracts approved by Board of Control for expenditure of \$68,813, coming within bond issue of \$70,000 which was recently put out. There will be eight new pieces of apparatus and six which will be old apparatus remounted on motors. Contracts which were awarded by Board are as follows: Three pumps, one chemical, to the Robinson Fire Apparatus Manufacturing Co., of St. Louis, at \$27,425; one chemical, four tractors, to Front Drive Motor Co., Hoboken, N. J., at \$19,800; one pump, two chemicals and two tractors, to the Knox Automobile Co., Springfield, Mass., at \$22,588.

**Erie, Pa.**—By Board of Fire Commissioners, for 4,500 ft. of cotton fire hose and 600 ft. of chemical hose, as follows: Bi-Lateral Fire Hose Co., of Chicago, 1,000 ft. at \$1.10 per ft.; Eureka Fire Hose Co., New York, 1,000 ft. at \$1.10 per ft.; Gutta Percha and Rubber Manufacturing Co., New York, 1,000 ft. at \$1.10 per ft.; Voohees Manufacturing Co., of Jersey City, 500 ft. at \$1 per ft.; Boston Woven Hose Co., Boston, 500 ft. at 90 cts. per ft.; Weller Warfel Co., Erie, 250 ft. at 87 cts. per ft.; Republic Rubber Co., Youngstown, 250 ft. at \$1 per ft. Contract for 600 ft. of chemical hose was awarded to Bi-Lateral Fire Hose Co., at 36 cts. per ft.

**Philadelphia, Pa.**—By City for 60-horsepower machine for fire chief, to White Co. for \$4,000. The Henry A. Rowan Co. received contract for five machines for five District Engineers, at \$2,575 each. Other six district men will have small runabouts, contract for which was

awarded to Ford Motor Co., at \$615 each. Council recently appropriated \$35,000 to purchase these cars.

#### BRIDGES

**Canon City, Col.**—New steel and concrete bridge will be constructed across Arkansas river below Florence.

**Chico, Cal.**—Supervisors have approved plans submitted by City Engineer Martin Polk for enlarging and asphaltting bridge over Little Chico creek at the head of Main st. As soon as Trustees approve plans, contract will be let and work will be started immediately.

**Hastings, Fla.**—Citizens of Hastings will present petition to County Commissioners asking that bridge over Cracker branch northwest of Hastings be repaired and road improved.

**Pensacola, Fla.**—Election will be held for voting on construction of bridge connecting Santa Rosa and Escambia counties.

**Richmond, Ind.**—County Commissioners have issued call for bids on construction of new Kline bridge across Symonds creek, northwest of Cambridge City.

**Topeka, Kan.**—Ordinance authorizing Mayor of city to issue proclamation calling election for purpose of submitting to legal voters propositions to construct certain bridges and to issue bonds to pay for construction has been presented for first reading.

**Buffalo, N. Y.**—Finance Committee has approved recommendation of Commissioner of Public Works that bonds in sum of \$75,000 be issued to defray cost of viaduct that is to be built over ship canal at Hamburg turnpike.

**Winston-Salem, N. C.**—Bond election of \$5,000 is being considered for erection of steel bridge across Yadkin River, linking Forsyth and Davie.

**Cleveland, O.**—Plans have been prepared and bids will shortly be asked for erection of new Superior ave. N. W. high level bridge.

**Columbus, O.**—Bids will shortly be received by Commissioners of Franklin County for construction of reinforced concrete arch bridge over Black Lick Creek, on East Broad st.

**Youngstown, O.**—Two plans for bridge, to replace present East End viaduct have been prepared by City Engineer and turned over to Mayor.

**Philadelphia, Pa.**—Bids for bridge and sewer work, amounting to \$500,000 will be opened by Bureau of Surveys on August 2.

**Shamokin, Pa.**—Samuel May, well-known architect of this city, has been instructed by County Commissioners to draw plans for erection of reinforced concrete bridge on Vine st., Mt. Carmel.

#### CONTRACTS AWARDED

**Ventura, Cal.**—To Galley & Clark, Grant Building, Los Angeles, at \$7,250, for construction of three reinforced bridges on Nordhoff rd. in Ventura Co. Other bids received were as follows: Mercereau Bridge and Construction Co., \$7,900; S. M. Kerns, \$7,900; Putnam Stone Co., \$8,485.

**Hopedale, Ill.**—Highway Commissioners of Hopedale township and Bridge Committee of Board of Supervisors opened bids for repairs to big bridge in Hopedale township, over Mackinaw. Following bids were submitted: G. A. Quinlan, concrete work, \$14.50 cu. yd.; Burnham & Ives, iron work, \$1,700; concrete work, \$10.25; Ed. Cooney, iron work, \$1,655; concrete work, \$3.80. Joliet Bridge & Iron Co., iron work, \$1,584; concrete work, \$9.50. Contract for iron work was let to Joliet Bridge & Iron Co., and for concrete work to Edward Cooney, of Tremont.

**Milledgeville, Ill.**—By Highway Commissioners, to H. P. Ritzlow, Tiffany, Wis., at \$5,452, for construction of four concrete bridges.

**Pontiac, Ill.**—By Bridge Committee of Livingston County Board of Supervisors and Commissioners of Long Point, to Continental Bridge Co., Peotone, Ill., at \$1,310, for construction of steel bridge over Long Point Creek.

**Logansport, Ind.**—By Cass County Board of Commissioners, to National Concrete Co., 804 Traction Terminal Bldg., Indianapolis, for construction of \$40,000 concrete bridge over Wabash River, at Georgetown.

**Muncie, Ind.**—By County Commissioners, for six bridges. Indiana Bridge Co. of this city was successful bidder on all bridges excepting Fullhart bridge, to be constructed across Kilbuck Creek in Harrison Township. Latter bridge will be two spans, each 25 ft. in length and will be constructed entirely of cement, sim-

ilar to one erected at Yorktown few years ago. Stanley Russey, of this city, had lowest bid on Fulmar bridge. Other five contracts let by Commissioners calls for four new bridges, all of steel structure and cement flooring. They are the Lesh No. 2, in Perry Township; Hurley in Salem Township; Duddleston in Liberty and the Pittenger in Niles. Whitney bridge will also be lowered.

**New Orleans, La.**—By City for improving Magnolia and Claybourne Bridge, to Midland Bridge Co., of Kansas City, Mo., for \$6,750.

**Saginaw, Mich.**—By Board of Public Works, to W. N. Sager, at \$28,477.77, for construction of sub-structure, and to Detroit Bridge & Steel Works, at \$44,200, for super-structure of Joanson st. bridge.

**Vicksburg, Miss.**—By Board of Commissioners of Warren County, to Vicksburg Boiler & Iron Works, at \$1,473, for construction of steel bridge over Ball Ground Creek.

**Springfield, Mo.**—By Board of Commissioners of Green County, to Canton Bridge Co., New York Life Bldg., Kansas City, Mo., at \$6,522.75, for construction of two bridges and repairs to several reinforced concrete bridges.

**Warrensburg, Mo.**—By Drainage District, to Midland Bridge Co., Midland Bldg., Kansas City, Mo., at \$7,500, for constructing eight steel bridges.

**Newfield, N. Y.**—By Town Board, to Gaffey & Byrnes, Syracuse, N. Y., at \$3,190, for construction of reinforced concrete arch and steel bridge.

**Rome, N. Y.**—By Superintendent of Public Works, to Lupier & Remick, Buffalo, N. Y., at \$19,874, for construction of bridge over Black River Canal, at E. Dominick st., Rome.

**Vernon, O.**—For construction of bridge over Pymatuning Creek, to Oregonia Bridge Co., at \$895.

**Newport, R. I.**—By State Board of Public Roads to T. J. Hynes & Son, of Wales, Mass., for repairs to stone bridge. The bid "of successful company for this work was \$530, others being from G. F. Austin & Co., South Kingstown, \$1,025, and Darling & Slade, of this city, \$1,150.

**Huntington, W. Va.**—By court, to Brackett Bridge Co., of Cincinnati, for construction of bridge across Big Cabell Creek.

**Forest, Wis.**—For erection of bridge over Sheboygan River in town of Forest, to Joseph Mertes, of Forest, at \$1,067.

## MISCELLANEOUS

**Los Angeles, Cal.**—The handsome municipal pier designed for Hermosa Beach will be largest reinforced concrete pier on coast. It will extend 1,000 ft. over ocean and will cost approximately \$100,000.

**San Francisco, Cal.**—Hospital bonds in sum of \$180,000 have been sold; also city hall bonds in sum of \$2,640,000, and ex-position bonds in amount of \$1,000,000.

**Waterbury, Conn.**—Local Board of Aldermen in accordance with recent referendum on question of building city hall to replace one recently burned, has voted to build new hall on site.

**Hammond, Ind.**—City will shortly have a public produce market.

**Muncie, Ind.**—At special session of County Council, \$25,000 was appropriated to be used in making extended improvements at County Infirmary, east of city.

**South Bend, Ind.**—Ordinance has been passed providing for issuance of \$40,000 worth of general purpose bonds.

**Louisville, Ky.**—Board of Public Works is considering erection of garbage reduction plant.

**Belair, Md.**—Harford County Commissioners have decided to greatly improve county jail at Belair.

**Hagerstown, Md.**—Mayor and Council will be asked to appropriate money for purchase of motor truck; estimated cost, \$4,500.

**Kalamazoo, Mich.**—Plans are being considered for erection of new police station.

**St. Paul, Minn.**—Bond issue of \$100,000 has been asked for city playground.

**Senatobia, Miss.**—Citizens have voted to install sewer system.

**Camden, N. J.**—To provide for extension of city's wharf and dock system, Council has authorized bond issue of \$65,000.

**Trenton, N. J.**—Sum of \$7,500 has been asked for playground improvement.

**Lackawanna, N. Y.**—Erection of new \$75,000 city hall and jail will be commenced shortly.

**Utica, N. Y.**—Bond issue of \$12,000 is recommended to Common Council for purchase of automobile apparatus for Police and Fire Departments.

**Raleigh, N. C.**—Board of Aldermen has adopted resolutions for erection of city abattoir.

**Barberton, O.**—City is contemplating installation of garbage crematory.

**Erie, Pa.**—Councilman Knepper's ordinance providing for \$17,000 to begin work on new municipal garbage plant has been recommended for passage in Select Council and is now ready for action on first and second readings.

**Hays, Pa.**—Borough Council of Hays has decided to purchase motorcycle.

**Galveston, Tex.**—Board of County Commissioners has ordered Auditor to advertise for bids for new county jail.

## CONTRACTS AWARDED

**Oakland, Cal.**—By Council for disposal of city's garbage, to C. A. Hooper Co.

**Hartford, Conn.**—By Municipal Building commission, for new building, to Davis & Brooks.

**Marion, Ind.**—For construction of market house and civic hall, to C. W. Barley, at \$35,952.

**Des Moines, Ia.**—For erection of new market house, to W. H. Brereton. City Council has awarded the building contract to him at \$39,200.

**Burlington, Vt.**—By City Council for garbage collection, to N. C. Florence, at \$1,800 per year for three years. Other bids as follows: Oliver Canning, \$2,400 for one year contract; Thomas P. Redmond, \$2,400 per year for three year contract; John P. McKenzie, South Burlington, \$3,000 for one year's contract; Ira E. Chase, \$2,400 per year for five year contract; Augustus E. Brown, \$2,800 for one year's contract; Hoyt E. Salls, \$2,400 yearly for five year contract; F. H. McCale, \$3,120 yearly for five year contract; Edward T. Daley, \$3,000 yearly, no time specified; Charles R. Bacon, \$2,160 yearly for five year contract; Frank Girard, \$2,200 yearly for two years, or \$2,000 yearly for three to five years; Charles King, \$3,600 yearly for five year contract.

**Philadelphia, Pa.**—To General Motors Truck Co., by Director Porter, contract for five one and one-half tons chassis for police patrol wagons, price being \$1,882.67 each, totaling \$9,413.35.

**Racine, Wis.**—For construction of new Racine County court house, as follows: General Construction Co., Milwaukee, general contract, \$143,900; Thomas Heating Co., Racine, heating and ventilating system, \$10,943; Charles Wilkenson Co., Minneapolis, plumbing contract, at \$5,476; Electrical Construction Co., Racine, electrical work, at \$2,780.

## TOO LATE FOR CLASSIFICATION

### BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK.	ADDRESS INQUIRIES TO
<b>STREET IMPROVEMENTS</b>				
Indiana.....	Crown Point.....	Aug. 5, 8 p.m.....	Constrn. 12,000 sq. yds. paving.....	H. U. Parry, City Clk.
Minnesota.....	Minneapolis.....	Aug. 5, 11 a.m.....	Grad. road bed of Nicolette avenue.....	County Commissioners.
Indiana.....	Connerville.....	Aug. 5.....	Constrn. 5 miles stone road.....	J. L. Kennedy, Co. Aud.
Connecticut.....	Willimantic.....	Aug. 5, 8 p.m.....	Constrn. 1,700 yds. granite block.....	D. B. O'Connor, Chm. Comm.
New Jersey.....	Perth Amboy.....	Aug. 5, 8.30 p.m.....	Constrn. asphalt block and bitulithic pav'ts.....	G. M. Adair, St. Comr.
Texas.....	Waco.....	Aug. 6, 10 a.m.....	Constrn. pav'ts in several streets.....	J. H. Mackey, Mayor.
Iowa.....	Davenport.....	Aug. 6, 2 p.m.....	Constrn. concrete pav't and curbing.....	A. M. Compton, Chm. B. P. W.
Minnesota.....	Pipestone.....	Aug. 6, 10 a.m.....	Constrn. State roads.....	C. Ridgeway, Co. Aud.
Minnesota.....	Two Harbors.....	Aug. 6, 10 a.m.....	Grad. roads.....	J. P. Paulson, Co. Aud.
Indiana.....	Madison.....	Aug. 6, 10 a.m.....	Macadam. road; cost, \$2,345.....	County Commissioners.
Indiana.....	Bluffton.....	Aug. 6, 1 p.m.....	Constrn. gravel road.....	I. A. Williamson, Co. Aud.
Wisconsin.....	Watertown.....	Aug. 7, 7 p.m.....	Constrn. cement walk.....	Board of Education.
Indiana.....	Bloomfield.....	Aug. 7, 2 p.m.....	Constrn. macadamized road.....	C. H. Jennings, Co. Aud.
Maryland.....	Baltimore.....	Aug. 7, 11 a.m.....	Constrn. granite block and vitrified block pav't.....	R. K. Compton, Chm. Comm.
Mississippi.....	Jackson.....	Aug. 8, 10 a.m.....	Constrn. gravel roadway.....	G. W. Sarlls, Engr.
Idaho.....	Weiser.....	Aug. 9, 2 p.m.....	Constrn. 27,000 yds. of pav't.....	R. J. Wood, City Engr.
Maine.....	Augusta.....	Aug. 14, 3 p.m.....	Constrn. highway in town of Wells.....	P. L. Hardison, State rd'way Comr.
New Jersey.....	Trenton.....	Aug. 19, 1 p.m.....	Constrn. roads at Skillman.....	D. F. Weeks, Supt.
Missouri.....	Sedalia.....	Aug. 24, noon.....	Constrn. 47½ miles roads.....	Chas. McEniry, Chm. Dist.
<b>SEWERAGE</b>				
New Jersey.....	Long Port.....	Aug. 6, 8 p.m.....	Constrn. 4,200 ft. pipe sewer and tanks.....	W. S. Gilmore, Boro. Clk.
Iowa.....	Des Moines.....	Aug. 7, 9 a.m.....	Constrn. 3,300 ft. pipe sewer.....	J. A. Hanna, Mayor.
Iowa.....	Waterloo.....	Aug. 12, 7.30 p.m.....	Constrn. a number of sewers.....	R. L. Degon, City Clk.
Wisconsin.....	Janesville.....	Aug. 15, 2 p.m.....	Constrn. sewers in several districts.....	J. A. Fathers, Chm. B. P. W.
<b>WATER SUPPLY</b>				
New Jersey.....	Trenton.....	Aug. 19, 1 p.m.....	Constrn. water tank tower and extensions at Skillman.....	D. F. Weeks, Supt.
<b>LIGHTING AND POWER</b>				
Texas.....	Galveston.....	Aug. 15, noon.....	Furn. surface condenser, pump, etc.....	J. D. Kelley, City Sec'y.
<b>FIRE EQUIPMENT</b>				
Ohio.....	Niles.....	Aug. 10, noon.....	Constrn. fire house.....	I. E. Tregaskis, Clk.
Minnesota.....	Austin.....	Aug. 17, 8 p.m.....	Constrn. fire house.....	F. Cronin, City Recorder.
Utah.....	Logan City.....	Aug. 20.....	Furn. motor comb. pump, engine hose and chemical wagon.....	H. G. Hayball, Supt. Pub. Safety.
<b>BRIDGES</b>				
Montana.....	Bozeman.....	Aug. 6, 10 a.m.....	Rebldg. wood truss bridge.....	E. H. Schumacher, Co. Clk.
New York.....	Hogansberg.....	Aug. 7, 1 p.m.....	Constrn. bridge across river.....	M. W. Lantry, Supt.
<b>MISCELLANEOUS</b>				
New Jersey.....	Roselle Park.....	Aug. 9, 8 p.m.....	Constrn. borough hall.....	A. M. Woodruff, Boro. Clk.



# STREET IMPROVEMENTS

**Fort Payne, Ala.**—Petition is being circulated by some of leading citizens of this county to call election to see whether county will issue bonds to build public roads.

**Orlando, Fla.**—Plan has been put in motion to circulate petition asking Commissioners to call special election to vote on question of issuing bonds for building 40 or 50 miles of brick roads in this district to meet roads that will be built by Sanford district.

**Chicago, Ill.**—City Council has voted \$1,750,000 bond issue towards expense of widening Twelfth st.

**Lexington, Ky.**—Street construction ordinances have been passed which allow part of South Upper and South Mill sts. to be constructed with brick and part with asphalt.

**Augusta, Me.**—Council has voted to expend total of \$16,100 for highway improvement.

**Caribou, Me.**—It has been voted to spend \$1,000 on road leading from Caribou to Presque Isle.

**Gardiner, Me.**—Gardiner is to have \$2,000 from State for good roads, which with \$1,000 recently appropriated and amount from appropriations for past two years that were held over, will make about \$5,000, which is to be used in improving causeway, presumably to Farmingdale line.

**Portland, Me.**—Bond issue in sum of \$220,000 is being considered for street work.

**Grand Rapids, Mich.**—Board of Supervisors has accepted John Nuveen & Co.'s bid for \$200,000 worth of Kent County road improvement bonds.

**Saginaw, Mich.**—Plans are being discussed for extensive street improvements.

**Prospect Park, N. J.**—Oiling of streets is being considered.

**Port Chester, N. Y.**—Port Chester Board of Trustees has adopted formal resolutions to advertise for bids for paving North Regent st.

**Syracuse, N. Y.**—Board of Contract and Supply has asked for new proposals on eight pavements. This was necessitated by changes in specifications.

**Walden, N. Y.**—Board of Trustees will hold special meeting at which question of paving section of East Main st. under railroad bridge from Hepper st. to Railroad ave. will be discussed.

**Hamilton, O.**—County Commissioners have received plans and specifications and estimate of cost for repair of improved portion of Middletown Pike, from State Highway Commissioner John R. Marker. Commissioner estimates cost of repairs at \$2,436, entire amount to be paid by State.

**Massillon, O.**—Petition for 80-ft. brick boulevard between Massillon and Canton has been drawn up.

**Youngstown, O.**—Bids will be received until 2 p. m. August 19, at office of City Auditor, for purchase of street improvement bonds. D. J. Jones, City Auditor.

**Eugene, Ore.**—Ordinance has been passed providing for paving of West Eleventh st., from Lincoln to Tyler, kind and quality of pavement to be determined when bids are opened.

**Altoona, Pa.**—Resolutions have been approved for repairing of various streets.

**East Fallowfield, Pa.**—Road macadamizing contracts to amount of \$21,070 have been let by Supervisors of East Fallowfield Township, near Coatsville.

**East McKeesport, Pa.**—Voters have approved of increasing bonded indebtedness \$60,000, of which \$29,000 will be for street and sewer improvement.

**McKeesport, Pa.**—Bills to improve Hickory ave. bond issue of \$15,000 to improve William alley and for a sewer on Beaver st. have been passed.

**Pittsairn, Pa.**—Citizens have voted in favor of \$32,000 bond issue for paving and grading and other street improvements.

**Pittsburgh, Pa.**—Resurfacing of avenues and streets in various parts of city, aggregating over \$100,000, is provided in ordinance submitted by Director Armstrong, of the Department of Public Works.

**Portsmouth, Va.**—City Engineer Cassell will shortly begin work of drawing plans for concrete culvert to extend across creek at north end of Dinwiddie st. to replace wooden bridge now standing, which is badly in need of repairs, and will also make estimate of cost of same, which will be submitted to Street Committee.

**Green Bay, Wis.**—Oiling of streets has been ordered.

## CONTRACTS AWARDED

**Meridian, Miss.**—By City, to P. C. Powers & Son, of Memphis, Tenn., to lay 10

miles of concrete sidewalks; two miles curbing and gutter and two miles sewer. C. W. O'Leary is City Clerk.

**Kansas City, Mo.**—To J. C. Nichols, for grading about one mile of street in Country Club Heights; requires 50,000 yds. excavation.

**Erie, Pa.**—By Council for curbing of Twenty-fifth st., from Parade st. to East ave., both sides where not already curbed, to Louis Moski, at 32 1/2 cts. a ft. Willis Bancroft offered to do work for 60 cts. On Himrod resolution for repaving Diamond alley, from Twelfth to Fourteenth sts., Mayer Bros. Contractors Co., bid 95 cts. for Bermudas asphalt, and J. & M. Doyle wanted \$1.15. Mayer Co. got job, amounting to about \$700.

**Erie, Pa.**—By Council for street improvements as follows: Pavement on Twenty-sixth st., from French to Parade st., awarded to Mayer Bros., for asphalt, at \$1.26 1/2 per yd.; artificial curbing at 32 cts. a ft.; catch basins at \$40; spills at \$5; 9-in. pipe at 75 cts., and 6-in. pipe at 50 cts. a foot. Lid on brick was \$1.40. McCormick's bid \$1.28 on asphalt. J. & M. Doyle bid \$1.30. Pavement on Fifth st., from Parade st. to East ave., awarded to John McCormick & Son for Bermudas asphalt at \$1.26; curbing, 32 cts.; catch basins, \$38; spills, \$5; 9-in. pipe, 75 cts., and 6-in. pipe, 50 cts. Bessemer block was quoted at \$1.42. Mayer Bros.' bid was \$1.26 1/2 and J. & M. Doyle's bid was \$1.30. Pavement on Fourth st., from Parade st. to Ash st., awarded to Mayer Bros. Construction Co. for Trinidad asphalt, Class B, at \$1.25; curbing, 32 cts.; catch basins, \$40; spills, \$5; 9-in. pipe, 75 cts.; 6-in. pipe, 50 cts. Bessemer block bid was \$1.42, McCormick's bid on asphalt was \$1.26, and J. & M. Doyle's bid was \$1.30.

**Nashville, Tenn.**—By Board of Public Works to Wilson Construction Co., to lay sidewalks on Lindsay ave., Carroll st., Academy pl. and Harrison st.

**Portsmouth, Va.**—Street committee of City Council have opened bids for several pieces of granolithic sidewalk throughout city. Only two bids were submitted for work which includes Third st., between Fayette and Henry sts.; Race, between Effingham and Green; North, between Cooke and Pearl; Ann, between Butler and the boulevard. A. F. Flynn being lowest bidder, his price being 95 cts. per sq. yd., was accepted.

## SEWERAGE

**Lexington, Ky.**—Construction of public sanitary sewer on Kentucky ave., from Main to Central sts., has been ordered.

**Saginaw, Mich.**—Common Council has approved of plans for construction of sewers in various streets.

**Audubon, N. J.**—Borough of Audubon is agitating the installation of municipal sewerage system, and Council has fixed \$65,000 as limit of cost, to be decided at special election.

**New Hartford, N. Y.**—Bonds which are to provide revenue for constructing sewer system in District No. 1, of the Town of New Hartford, have been sold by Supervisor Seaton. Bonds in amount of \$4,000, were sold to Isaac W. Sherrill, a bond buyer of Poughkeepsie.

**Oneida, N. Y.**—Board of Public Works has received petition from residents of Lake st. for extension of sewer system to include that thoroughfare from Almond to Verona sts. Extension would include 1,450 ft.

**Columbiana, O.**—Special meeting of Village Council has been held for purpose of passing necessary resolution preliminary to calling election for voting on issue of bonds for construction of sewer system in village.

**Sharon, O.**—In compliance with recommendation of Dr. Samuel G. Dixon, that boroughs of Sharon and Farrell act jointly in matter of building sanitary sewage disposal plant, Sharon solons have passed resolution favoring suggestion.

**Youngstown, O.**—Bids will be received until 2 p. m. August 19, at office of D. J. Jones, City Auditor, for purchase of sewer bonds.

**Eugene, Ore.**—Details of proposed trunk sewer system for Eugene have been submitted to City Council. Sewer system is intended to drain practically every portion of present city within its legal limits and to be capable of expansion to care for city of 100,000 population.

**Eugene, Ore.**—Advertisements calling for bids for \$183,500 of 30-year sewer bonds have been ordered published by City Council.

**East McKeesport, Pa.**—Voters of East McKeesport Borough have approved question of increasing bonded indebtedness \$60,000, of which \$31,000 is to be used to

liquidate floating indebtedness; and \$29,000 for sewers and street improvement.

## CONTRACTS AWARDED

**Newburgh, N. Y.**—Mayor Corwin has approved eight resolutions passed by City Council. These included resolutions awarding contracts for five new sewers, one to Michael R. Spino and four to Jova & Kehoe, Inc.

**Erie, Pa.**—By Council to Contractor Edward Driscoll for laying 9-in. sewer in Third st., from Wallace st., eastwardly 470 ft., at \$1.25 a ft. His only competitor, Clement Wolfram, bid \$1.50. The 6-in. pipe comes at 50 cts.; Y or T branches at \$1.35 and manholes at \$50. Nine-in. sewer contracts for Reed st., and 24-in. pipe for Hill rd. were awarded to Joseph McCormick & Bro. Only competing bids being from Clements Wolfram. The 9-in. pipe will cost 85 cts. a ft., and the 24-in. pipe, \$1.90 a ft.

**Erie, Pa.**—By Council for construction of eastern Sixth Ward drainage sewer system, to Joseph McCormick & Bro., at \$8,900. Sewer comprises 24-in., 12-in. and 9-in. mains in Nineteenth and connecting streets from Chestnut st. to Mill Creek Valley. For 24-in. pipe, McCormicks asked \$2.98, and F. J. Eichenlaub wanted \$2.73. The 12-in. pipe was quoted at \$1.25; 9-in. at \$1; 6-in. at 60 cts., and manholes at \$40.

## WATER SUPPLY

**Cambridge City, Ind.**—City Council is considering installing new water system.

**Elmer, N. J.**—Word has been received by Borough Council of Elmer, that work on new water works will begin positively not later than August 15.

**Newfane, N. Y.**—At special election held by voters of village, proposition to expend \$8,000 for water mains in principal streets was carried 96 to 1.

**Walden, N. Y.**—At meeting of Board of Water Commissioners, contract for laying about 4,000 ft. of water main on East ave. to East Main st., was awarded to Samuel Scribner, at 28 cts. a ft. Scribner is to do all excavating, laying and calking of mains and refilling of trench; trench to be 5 ft. in depth and 2 ft. in width, all pipe to be calked in ditch. Village is to furnish all pipe and material, and work is to commence about August 15.

**Akron, O.**—Council has authorized Server Pillmore to expend \$230,000 for water works supplies and improvement. This money was obtained by sale of bonds authorized at last election. Money will be used in building storage reservoir on Tallmadge Heights, in constructing pipe lines on East Exchange st., East Market st. and Case ave., and to purchase pipe.

**Sharpsville, Pa.**—Borough Council is in the market for water motor pump for sewerage, capable of handling from 12,000 to 15,000 gallons per hour on 35 ft. head; centrifugal pump preferred. W. A. Graber is secretary.

**Dallas, Tex.**—About 600 meters will be purchased.

**Whitewater, Wis.**—Construction of water works will shortly be voted on.

**Honolulu, Hawaii.**—Sum of \$265,000 will be expended by Department of Public Works for new water works system.

## CONTRACTS AWARDED

**Pavo, Ga.**—By City to J. L. Thrash, of Tifton, Ga., to construct water works.

**Bedford, Ind.**—Contracts amounting to \$24,790 for improvements at water works have been awarded by City Council. For basin, to Ewing Shields, of Seymour, at \$16,300, and for pumping station building to L. B. Emery for \$790. For pumps and meters to Dravo-Doyle Pump Co., of Chicago, at \$7,700.

**Mountain Iron, Minn.**—By Village council to Chicago Bridge & Iron Works, for steel tower and water tank for \$6,020, and for American Ball engine and dynamo for \$2,500, thus giving plant double equipment of steam and electric power.

**Biloxi, Miss.**—By Council to Cooper-Greer Co., of Gulfport, for construction of water works improvement. The United States Cast Iron Pipe and Foundry Co. got contract for furnishing pipe, and contract for hydrants was let to Columbian Iron Works, of Chattanooga, and that for valves to Fairbanks Co., of New Orleans.

**Buffalo, N. Y.**—For reconstruction of collapsed pumping station, to B. I. Crooker Co.

**Erie, Pa.**—Water Commissioners have completed final details in closing \$466,000 contract between city and Henry Shenk Co. for reconstructing pumping station at water works and installing filtering plant in connection with city water supply.

## PROPOSALS

### PAVING AND SEWERAGE

Springfield, Ohio.

Sealed bids will be received until 12 o'clock noon, of Thursday, Aug. 15, 1912, by the Director of Public Service of the City of Springfield, Ohio, at the office of the Clerk, Room 6, City Building, for the following:

Paving of Columbia St., from Lagonda Ave. to Limestone St.;  
Cleaning, deepening, flooring and walling of Mill Run from Buck Creek to East St.;  
Construction of the Wheldon Ditch Storm Water Sewer;

Purchase of a Fire Wagon and Asphalt Mixture Heater and Tools, with a capacity of at least 40 sq. yds. per day.

All bids must be accompanied by a certified check on a Springfield, Ohio, bank.

Plans and specifications can be secured from the City Engineer, City Building, Springfield, O. (5, 6)

### STEAM FIRE ENGINE

City of Trenton, N. J.

Sealed proposals will be received by the Board of Commissioners of the City of Trenton, N. J., at an open meeting to be held Wednesday, Aug. 21, 1912, in the Municipal Building, at the hour of 2.30 o'clock in the afternoon, for one extra first size steam fire engine, for the Trenton Fire Department.

Bidders will be required to bid under their own general specifications for building a modern extra first size engine, complete in all details of workmanship, equipment, capacity and functions under guarantee.

Other equipment to be required of the successful bidder can be ascertained by inquiry before bids are submitted, by applying at the office of the Director of Public Safety, Municipal Building, Trenton, N. J., prior to the date of the meeting, at which bids are to be received, as above.

The contract will be awarded for the apparatus that best meets the requirements of the department, and the right is reserved to reject any or all bids not considered to the best interests of the City.

A certified check for Five Hundred Dollars, payable to the City Treasurer, must accompany each bid, and the deposit of the successful bidder will be held until the acceptance of the bond and contract to be entered into for the faithful and expeditious performance of the contract.

GEORGE B. LA BARRE,

(5, 6) Director of Public Safety.

### FIRE ALARM SYSTEM

Missoula, Mont.

Sealed bids or proposals will be received by the City Clerk at the City Hall, Missoula, Mont., till 10 o'clock a. m., Aug. 7, 1912, for furnishing, delivering and installing an automatic Fire-Alarm System for the City of Missoula, Mont., in accordance with the specifications on file in the office of the City Clerk, Missoula, Mont.

The City Council reserves the right to reject any or all bids.

W. H. SMITH,  
City Clerk.

### FOR SALE

Twenty horse-drawn street watering carts, mostly steel tanks, and all in good condition.

AMERICAN CAR SPRINKLER CO.  
Worcester, Mass.

### International Association

OF MUNICIPAL ELECTRICIANS  
Represents the Electrical Depts. of American and Canadian Cities. C. R. George, Sec'y.  
Houston, Tex.

Potter Alexander 143 Liberty St.  
Civil and Sanitary Engineer New York City  
Specialties:  
Water Supply, Sewerage and Pavements

## PROPOSALS

### SEWERS

NOTICE TO CONTRACTORS.

Iron Mountain, Mich.

Sealed bids for the construction of  
1,370 ft. of 48-in. reinforced concrete sewer on Kimberly Avenue, from manhole on "D" street, to Hughitt Street, with manholes and 300 ft. of 6-in. laterals;

400 ft. of 24-in. tile sewer on Foster Street, from the center of "C" Street to Mud Lake;

480 ft. of 24-in. tile sewer on Hughitt Street, from manhole on Kimberly Avenue to Foster Street;

980 ft. of 24-in. tile sewer on "A" Street, from manhole on Kimberly Avenue to manhole on Carpenter Avenue;

together with necessary manholes, catchbasins and 650 ft. of 6-in. laterals, according to the plans and specifications therefor, prepared by the City Engineer and now on file in the office of the City Clerk, and for the furnishing of all labor and material necessary therefor, will be received by the Board of Public Works of the City of Iron Mountain, Mich., up to the 3d day of August, next, at 9 a. m.

All bids on concrete sewer must include a bid by the foot for an extension at the north end not exceeding 350 ft. in length, together with 130 ft. of 6-in. laterals and 2 manholes, and must be accompanied by a certified check for \$400, and bidders must furnish specifications and drawings showing kind of pipe to be used.

Bids on the tile sewer must include all three sewers in one lump sum, and must be accompanied by a certified check for \$250.

All bids shall be addressed to City Clerk, Iron Mountain, Mich., and shall be endorsed "Concrete Sewer Bid" and "Tile Sewer Bid," respectively.

The Board reserves the right to reject any and all bids.

By order of the Board of Public Works.

SOL. BEAUPARLANT, City Clerk.

Dated July 17, 1912. (4, 5)

### SEWERAGE

NOTICE OF RECEPTION OF BIDS

for the

BINGHAMTON-LESTERSHIRE TRUNK  
SEWER.

Binghamton, N. Y.

Sealed proposals will be received by the Board of Contract and Supply of the City of Binghamton, New York, and the Board of Trustees of the Village of Lestershire, New York, until the hour of 4 o'clock in the afternoon of the 7th day of August, 1912, for the following:

Construction of a joint trunk sewer from the intersection of Riverside Drive and interceptor "A" in the Village of Lestershire, to the intersection of Glenwood Avenue and Lake Avenue in the city of Binghamton, together with the necessary manholes, "Y" connections and other appurtenances as shown on plans.

The length of said sewer is 11,283 ft., of which 2,638 ft. is 30-in. pipe, and 8,645 ft. is 27-in. pipe.

Bids will be received on vitrified tile, sectional vitrified sewer blocks and concrete pipe.

Plans and specifications can be obtained by addressing Fr. Fancher M. Hopkins, City Clerk, City of Binghamton, and depositing check for \$10.00, which will be returned upon return of plans and specifications.

Proposals shall be accompanied by a certified check, cash or New York draft, in the sum of 5 per cent of the amount of the bid, and successful bidder will be required to give a bond for 50 per cent. of the amount of the contract.

BOARD OF CONTRACT AND SUPPLY,  
CITY OF BINGHAMTON;

BOARD OF TRUSTEES,  
VILLAGE OF LESTERSHIRE. (4, 5)

## SEWERS

NOTICE TO CONTRACTORS.

Schenectady, N. Y.

Sealed proposals will be received by the Board of Contract and Supply of the City of Schenectady, at their office in the City Hall Annex, until 2:30 p. m., Wednesday, Aug. 7, 1912, for the construction of a System of Surface Water Sewers in the Tenth Ward. The approximate estimate of the work to be done is as follows:

30,310 cu. yds. of earth excavation;  
20 cu. yds. of rock excavation;  
83 cu. yds. of 1-3-5 per cent. concrete;  
100 lin. ft. of 10-in. vitrified tile;  
4,830 lin. ft. of 12-in. vitrified tile;  
10,493 lin. ft. of 15-in. vitrified tile;  
1,330 lin. ft. of 18-in. vitrified tile;  
2,750 lin. ft. of 20-in. vitrified tile, double strength;

1,453 lin. ft. of 24-in. vitrified tile, double strength;

458 lin. ft. of 30-in. vitrified tile, double strength;

1,627 lin. ft. of 36-in. vitrified tile, double strength;

976 lin. ft. of manholes, vertical measurement;  
122 catchbasins;

96 lin. ft. of 16-in. cast-iron pipe;

36 lin. ft. of 20-in. cast-iron pipe;

6,000 board feet of lumber.

Plans and specifications may be obtained from the office of the City Engineer, W. Thomas Wooley, by making a deposit of Ten (\$10.00) Dollars, which deposit will be refunded at such time as the plans and specifications shall be returned.

All bids must be made upon the printed pages which are part of this specification and enclosed in a sealed envelope directed to the Board of Contract and Supply, and endorsed on the outside of the envelope "Proposal for Constructing Surface Water Sewers in the Tenth Ward."

Each bid must be accompanied by a draft or a certified check for Four Thousand (\$4,000.00) Dollars, issued by a National or State bank, in good credit with the State of New York, and made payable to the "City of Schenectady."

The Board of Contract and Supply reserves the right to reject any or all bids.

FRED E. JOHNSAON, Secretary,  
(4, 5) Board of Contract and Supply.

### CITY BONDS

Winchester, Ky.

Notice is hereby given that the Board of Council of the City of Winchester, Ky., will at the Council Chamber in said city on the 2d day of August, 1912, at 7:30 P. M., offer for sale 18 City Hall Bonds of \$1,000 each, dated Feb. 3, 1911, due 20 years from date, bearing interest at the rate of 4½ per cent. per annum, interest payable semi-annually.

Sealed bids will be received by J. A. Hughes, Mayor, up to the hour of sale. No conditional bids will be considered.

S. B. TRACY, City Clerk.

(3, 4, 5)

### SECOND HAND Transits and Levels For Sale

Gurley Transit (Level Bubble and Vertical Circle) .....\$127.50  
Eugene Dietzgen Transit (Level Bubble) 145.00  
Stackpole Transit (Level Bubble)..... 100.00  
Keuffel & Esser 15" Wye Level..... 57.50  
Eugene Dietzgen 18" Wye Level..... 80.00  
Stackpole 17" Wye Level ..... 55.00

Complete List furnished immediately upon request  
THE ENGINEERING AGENCY, Inc.  
Monadnock Block, CHICAGO

### FOR SALE CHEAP

Wrought Pipe, second hand, all sizes, recut and rethreaded suitable for all classes of work. Prices quoted on application.

MARINE METAL & SUPPLY CO.  
167 South Street, New York City